

**Modern principles and methods
in high school physical education**

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Preface

Modern Principles and Methods in High School Physical Education is designed for the professional methods course in physical education. It is intended to help the student analyze the learning patterns of adolescents and select and use the various methods and techniques that will best promote all-round growth. The basic assumption is that teaching is a profession just as demanding in its knowledge of methods and techniques as engineering or medicine and of equal importance. The methods course is that phase of professional preparation that unites theory and practice—the "know why" and the "know how."

- For clarity and emphasis the book is divided into five major parts. Part I deals with the fundamental principles of and the inter-relationships among the chief sources from*

which the high school curriculum should be drawn, namely, the social philosophy of democracy, the nature and needs of adolescence, and the nature and conditions of learning. Part II deals with the job of the teacher, the importance of his educational philosophy, and the specific problems of beginning teachers. Part III discusses modern principles, methods, and techniques of teaching. Part IV deals with curriculum content and the various activity media employed by students in learning. Part V suggests means for measuring and evaluating the results of instruction and for recording student progress.

Reflective thinking on the part of the student is encouraged by the discussion questions at the end of each chapter.

We are indebted to the many authors and publishers whose publications contributed to this book. We also wish to express our appreciation to Mrs. Marybelle Babourn, who typed the manuscript. Special thanks are extended to the schools whose activities are represented in the illustrations, to Dr. Norman C. Wetzel for supplying the cuts of his Grid and for his assistance in clarifying the application of the Grid technique, to Professors Nancy Brock and Abbie Rutledge of Purdue and to Betty Lou Hughes for their help with the section on rhythmical activities, to Mr. Daniel J. Ferris, Secretary-Treasurer of the Amateur Athletic Union, for permission to reproduce the A.A.U. Junior Fitness Tests, and to Mr. George J. Kozak, Directing Supervisor, Bureau of Physical Welfare of the Cleveland schools for his pinpointing some of the problems of beginning teachers.

Finally, gratitude is expressed to Miss Bette L. Eustis, whose helpful suggestions contributed much to this book.

Charles C. Cowell

Hilda M. Schwehn

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FOUNDATIONS OF PHYSICAL EDUCATION

Courtesy Los Angeles City Schools



In a time of crisis the individual likely to become a leader is he who senses the prevalent needs and knows how to structure the solution. Many kinds of leadership, however, are possible. If leadership that will enrich personality and satisfy its many potentialities is what we want, we must begin schooling the leaders early in life; if they are to lead effectively as adults, in competition with leaders who embrace authoritarian methods and appeals, they need democratic experience, and in particular experience in democratic leadership.

—GARDNER MURPHY



Physical education in American democracy

EDUCATION IS PURPOSIVE; it has some end in view. It has a certain kind of a world in mind. It idealizes a certain kind of society and a certain type of individual. Education is the social process of change in the behavior of human organisms. We educate people by changing them as individuals, by helping them to develop new insights, a new sense of values, and new abilities. Physical education contributes to this process by means of games and sports, aquatics, rhythmic activities, individual self-testing activities, camping and outdoor activities, and other similar areas.

Criticism of our schools and the lack of consensus of considered opinion concerning this criticism is frequent and contradictory. More time should be given to fundamentals. More vocational education should be stressed. Study is not related to contemporary life. Athletics and club activities are overemphasized. These are mere samples of the criticisms made by some Americans.

Should American education differ from education in England, France, Russia, or education in Mr. Nehru's India? Should we copy their system or they ours? By what criteria, measuring rods, or standards should we appraise American education? Is physical education an integral part of this educational process or is it something quite distinct and separate? What current criticisms of American secondary education are valid? What criticisms lack foundation in fact? Is physical education in secondary schools really facing up to the social realities of American culture?

Since education implies change, we can think of the direction in which we are trying to change people as our objective. Here we face the "why" of physical education. As we teach we merge this with the "how," for the function of a curriculum is to translate the "why" into "how" in order to achieve our objectives. This process involves two main steps: determining what ought to happen to boys and girls in physical education, and then knowing how to make it happen. In the first step, we are philosophers making value judgments. In the second step, we are scientists making fact judgments and doing those things that research and reflective thinking tell us we must do if we wish to attain our objectives. The soundness of our methods is determined by the degree to which we apply scientific, or tested, methodology.

We start in Part I by examining the four chief sources for curriculum planning and development. We use the word "foundations" advisedly, for we deal here with the fundamental principles upon which physical education curricula must be based. These give direction to what we, as teachers, do in the gymnasium, on the playground, on the athletic field, or in the pool. Since education takes place in society and in a cultural setting, we ought to examine continuously the social philosophy of democracy which we accept and by which we live. We must look at the social realities of American culture as well as at the nature and needs of the adolescent. Furthermore, we must re-examine the nature and conditions of learning, for methods of organizing learning experiences greatly influence the degree of retention and the permanence of attitudes and interests. Lastly, we must look at each of the four sources in relation to the others, for each acts upon and affects the others.

Importance of a social philosophy

American society is neither monarchial nor totalitarian. It has no legally established classes to which children are assigned by birth. Occupations, callings, and professions are open to all who would prepare themselves. Great social mobility exists as people move up and down the various socio-economic ladders. The office boy may become the manager, and the haberdasher may become president.

Democracy is a type of social organization. Fascism, Nazism, and

communism are likewise types of social organization, all of which the American people have strongly rejected. Here again, our basic beliefs concerning social organization set our scale of values and shape the pattern of what we think and do in life, society, and education. The boy and girl educated in a democracy should respond to situations with a different set of values, for democracy is more than "working together." It is a set of moral principles. For a school or a nation it is, therefore, important that we try to develop and understand a common philosophy. Because we live in groups, we must agree on some values by which we interpret events and by means of which we direct our own actions. Since we derive our theories of education from our philosophy of life, a clear concept of democracy is important.

Courtesy Alidian Photo Shop, Pullman, Washington



Races build sportsmanship

The American people have developed their schools at great sacrifice by agreeing to tax themselves financially and otherwise so that their children might understand the principles of democracy and learn to use them in social thought and action. The intelligent co-

operations upon which the success of democracy depends must be learned in the school. The school must provide rich opportunities for the study and practice of democracy as a way of life. This is its greatest social function.

Adolescence is a focal point in human development. It is the period when boys and girls are defining the self-image. Their successes and disappointments, their conflicts, desires, hopes, and ideals begin strongly to shape their personalities.

The function of the physical education curriculum is to translate social and educational philosophy into teaching procedures and into actual daily behavior. The curriculum is not only the medium for self-discovery and self-realization, but a steering gear for society as well. Each generation must acquire democratic patterns of behavior, feeling, and thought. Without this, democracy will be destroyed. Physical education teachers should provide the conditions and experiences conducive to the achievement of wholesome personal values and self-realization in harmony with the broader social goals of democracy. Is physical education making its rightful contribution to the continued existence of American democracy? To what extent can we organize the physical education curriculum in terms of social values in an atomic age and in an industrial democracy and still not slight the important personal goals of boys and girls?

Nature of American democracy

The system of social organization which unites group life by human relationships is tremendously important, for the personalities of citizens are molded by the kind of social organization to which a nation exposes those citizens. A communist represents certain values which become, for him, goals toward which action is desired, and his attitudes reflect tendencies to act in line with such values. Similarly, other totalitarian philosophies engender certain values and result in habits, physiques, characters, and personalities reflecting these values. We can recall the typical Russian communist, the Italian fascist, the German Nazi, and the Japanese jingoist of days not too far remote.

Democracy, like religion, is rather easy to detect, but very difficult to define. It is more easily comprehended when contrasted with authoritarianism, as shown in the following table.

Contrasting social philosophies

Democracy

- 1 Encourages thinking on the part of every individual Agrees that thinking is the method not only for deciding what to do but also for proving and extending the beliefs by which we live
- 2 Is concerned with the development of people—"How can we make our ways of doing things contribute to the development of the people who do them?"
- 3 Refuses to classify men as leaders who always lead and followers who always follow
- 4 Unites people not by wiping out differences but by developing the realization that we all profit by the individual abilities of each other Our differences enrich our common living make us strong and interdependent
- 5 The state exists for the people The government was created to aid in the development of people
- 6 Flexibility A free society able to change its way of life whenever changes become necessary Changes made with a minimum of violence

Authoritarianism

- 1 Encourages only the elite to think Sets up a single pattern of officially approved beliefs and values and compels others to accept them
- 2 Efficiency—"How can we best get things done?" The ends justify the means What happens to the individual is of less concern
- 3 Accepts the idea that it is possible for a select few always to know best what ought to be done
- 4 Irons out and destroys individual differences Stresses education which makes for conformity and molding Tries to make everyone value the same things Reduces people to a uniform mass
- 5 People exist for the state The development of the state is the primary concern
- 6 A static society Low social mobility Revolution rather than evolution

The curriculum of a high school physical education program has the obligation of becoming the medium by which this philosophy is embodied in human behavior. If we employed each of the six items in the democracy column as criteria for evaluating practices in a physical education program, what types of procedures would satisfy the criteria or meet the standards?

American education in retrospect

John Dewey has defined history as "the past of the present." Even though we are a young country, the United States is the world's oldest democracy and republic. Our early leaders realized that self-government would not work without an enlightened citizenry, that the welfare of the nation would be shaped by the schools.

Thomas Jefferson, in speaking of the public school as the bulwark of a free society, stated that "If a nation expects to be ignorant and free in a state of civilization, it expects what never was and never will be."

Our schools have fulfilled well their tremendous responsibilities of conserving the heritage and holding the allegiance of a people to the historic principles of democracy and maintenance of human freedom. In this venture, teachers of physical education have had no small part, for democracy has its roots in thousands of playgrounds, gymnasiums, and athletic fields.

The physical educator is engaged in the important task of developing the individual for social living. He induces people to work together for common ends, aids in developing mutual understandings, helps pupils to establish rights and duties, and develops in them a sense of group membership and unity. He helps boys and girls learn the ways of the group, become functioning members of it, act according to its standards, accept its rules, and in turn be accepted by the group. This, then, is the social function of general education to which physical education can make valid and valuable contributions.

In order to note some of the political, economic, and social changes that have occurred in America and to review the evolution of educational efforts to meet the resultant new demands and public needs, let us examine the chronology of events in the table below and then ask ourselves, "What has the supervision of play and

physical education done over the years to support and advance democracy and what can it do today? Do we have an unrealistic perspective of our physical education objectives as we examine the social context in the rapidly changing world of today? Are we in danger of preparing boys and girls to live in a world which no longer exists?

Growth of democracy and education in America

- 1619 First representative assembly in America established at Jamestown
- 1620 Signing of the Mayflower Compact a written agreement the beginning of self government in America
- 1635 Founding of Latin Grammar School Boston.
- 1636 Founding of Harvard
- 1639 The Connecticut Constitution which recognized that the government's power was lodged with the people Right to vote did not depend on church membership as in Massachusetts
- 1642 Massachusetts Law required all pupils including apprentices to learn to read and write Foundation stone of present American system of tax supported public elementary and secondary education
- 1647 Establishment of public schools in Massachusetts The "Old Deluder" Law—Communities of 50 families appointed one of their number to teach Wages paid by parents and masters Communities of 100 families to establish a grammar school
- 1691 Right of voting extended to all property owners in Massachusetts
- 1735 Freedom of the press upheld when Zenger editor of *Weekly Journal* is found not guilty of sedition In 1732 Governor William Cosby of New York quarreled with council members and ousted the chief justice Zenger attacked Cosby in press
- 1751 Founding of Franklin's Academy in Philadelphia in response to the demand for a more practical type of secondary school Aims of American secondary education clarified Program adopted and expanded to the needs of contemporary society Emphasis upon environment of the school its equipment and plant Physical training made a part of an educational institution.
- 1774 First Continental Congress met, marking the first united appeal of the colonies for recognition of their ideas of liberty

- 1776 Declaration of Independence expressed the belief that "all men are created equal."
- 1778 Founding of Phillips Academy at Andover, Massachusetts.
- 1787 Ordinance of 1787. "Religion, morality and knowledge, being necessary to good government and the happiness of mankind, schools and the means of education shall forever be encouraged."
- 1788 The Constitution of the United States ratified, the oldest written constitution in the world.
- 1791 Bill of Rights, defining the liberties of the people, ratified.
- 1821 Founding of English Classical School, forerunner of high school, a three-year school featuring a curriculum for the practical pursuits of life rather than for college entrance in Boston.
- 1826 Founding of first high school for girls in Boston, Mass.
- 1827 Massachusetts law requiring instruction in high school subjects in each town. First Interclass football game at Harvard.
- 1828 Ballot extended to the common man, who now can vote in many states even though he owns no property.
- 1833 Founding of Oberlin College, the first institution of higher learning to admit women.
- 1840 High school became coeducational.
- 1848 First Turnverein (German gymnastic society) formed in Cincinnati.
- 1853 Boston requires daily exercise for school children.
- 1857 National Teachers Association formed in Philadelphia.
- 1859 First Intercollegiate baseball game, Williams vs. Amherst.
- 1861 Required physical education program started at Amherst College by Dr. Hitchcock.
- Normal Institute for Physical Education established in Boston by Dr. Dio Lewis.
- 1862 Morrill Act provided for establishment of colleges devoted to agricultural and vocational education.
- 1867 United States Office of Education established as a "service agency."
- 1870 Fifteenth Amendment passed. Negro men over 21 years of age granted the right to vote.
- 1874 Tax-supported secondary education legalized by State Supreme Court of Michigan.
- 1879 Dr. Dudley Sargent became Physical Director at Harvard.
- 1885 Dr. William Anderson, later to become Professor of Physical Education at Yale, called first meeting of the American Asso-

- ciation for the Advancement of Physical Education which was the forerunner of present American Association for Health, Physical Education and Recreation
- 1887 Professional physical education course started at Springfield College
- 1892 The Committee of Ten The first to consider education from a national point of view Appointed by the N E A to consider "the general subject of uniformity in school programs and in requirements for admission to college"
- 1893 Dr Thomas D Wood at Stanford and later at Columbia encouraged a "science" of physical education
- 1896 Revival of modern Olympic games in Athens
- 1900 College Entrance Examination Board established Oberlin the first private liberal arts college to add a major professional program in physical education
- 1902 First public junior college in Joliet, Illinois
- 1910 First junior high schools in Berkeley Richmond Saginaw
- 1917 Smith Hughes Act provided for education in agriculture home economics trades and industry and teacher education in these fields.
- 1918 The Seven Cardinal Principles (health command of fundamental processes worthy use of leisure time, etc) First clear enunciation of secondary school objectives
- 1920 Women over 21 years of age given the right to vote
- 1924 American Indians made United States citizens
- 1930 Founding of American Academy of Physical Education in New York City
- 1935 American Youth Commission of the American Council on Education Surveys indicated that secondary schools tended not to meet the needs of a large percentage of the youth attending them
- 1937 Educational Policies Commission of the National Education Association produced many publications which influenced the reorganization of secondary education
- 1944 Service Men's Readjustment Act
- 1946 George Barden Act provided greatly increased funds for vocational education and provided funds for vocational counselors and vocational guidance supervisors
- 1956 President Eisenhower called the National Conference on the Fitness of American Youth and established a Council on Youth Fitness and a Citizens Advisory Committee on the Fitness of American Youth.

Social realities of American culture

Since the public school and physical education within it should be shaped to the needs of the individuals and communities it serves, some consideration should be given to the realities of American culture. It has been said that man is a biological animal immersed in a cultural field. Biologically, he comes into the world with inborn tendencies to respond, to be active, to explore his environment, and to learn. Socially, he is born a "cultural blank check" and learns to value specific things, to prize certain conduct and to reject other, to like certain foods and dislike others, to cooperate or be a "lone wolf." We say that he is molded by his background, his environment, the total situation in which he lives and learns. In this sense, physical education is a bio-social phenomenon. While the pupil is building muscular strength, organic power, and skill, he is also absorbing the social values of his gymnasium class, his school, and his society in some form.

Courtesy Arsenal Technical High School, Indianapolis



Working together for growth

What are some of the most important social trends and forces operating within the framework of American democracy which influence the circumstances and conditions under which physical education programs must operate? What are some of the important factors in our society which should have most significance for building a high (and elementary) school physical education program? This social context, or framework, within which school physical education functions should be related to curriculum planning and development, methods of teaching, and the formulation of physical education, school health, and athletic policies.

It will be left to the reader to suggest specific ways in which some of the realities of our American culture have significance for curriculum building and become part of a conscious plan for an improved world. Education is "world building." It is a great cooperative venture, the ultimate goal of which is better understanding and direction of human relationships. We have to be not only physiologists but philosophers, psychologists, and sociologists as well, in order to achieve our goals.

In this social heritage or learned behavior we call culture, games and sports have, since time immemorial, played an important role. Our culture determines what we play, how we play, and the moral codes or values by which we play. It is in the gymnasium and on the playing field that games and sports become the bearers of culture, and children and youth absorb much of their culture from these activities. The kind of personality one becomes in no small way depends upon the particular version of culture he receives in his play and physical education experiences.

Look at the social trends and forces in the table below and try to decide the degree to which our society measures up to the biological and cultural needs of its members, the degree to which our culture is good or bad, and what physical education and other teachers might do to improve our culture patterns and change the direction of social trends where this seems desirable.

Social trends affecting American culture

1. By 1980, one out of seven Americans will be over seventy years of age.
2. Sixty per cent of our people now live in urban centers or on their fringes. Only one fourth live on farms.

3. Where muscular work was once the chief source of energy, mechanization now uses only about two per cent of our available muscular power.
4. With television, radio, movies, and other sedentary recreation, and the wide use of automobiles with power steering, automatic shift, and "push button" window controls, man is not satisfying his biologic need for physical activity.
5. The forty-hour week with paid vacations is now standard, with a shorter week in the offing.
6. The family has lost a great deal of its former social integration and shares with the school and other social agencies the supervision of activities, but often without the parents assuming their full responsibilities.
7. Death from communicable diseases is decreasing while death from degenerative diseases, resulting from unhygienic living, is on the increase.
8. Although military service is likely for all young Americans, the nature of technological warfare leaves the various services inadequate time for developing strength, endurance, and other qualities necessary for survival.
9. In 1945, eighty per cent of all persons imprisoned were under twenty-five years of age.
10. Various low-grade radio, movie, and television programs, comic books, questionable advertising, and literature are in strong competition with organized education, the church, and other character-building agencies.
11. Mental illness and deficiency are still prominent causes for rejection from military and other service. The state and federal governments spend over \$200,000,000 a year on the care of the mentally ill.
12. About one marriage in four ends in divorce. In forty per cent of the divorces, children are involved.
13. Excessive athletic competition for boys is being pushed down lower and lower into the grades to the neglect of good physical education for all the children of all the people. The resulting overstimulation and the attitudes developed in immature children as well as the effects upon other aspects of growth and development need research study.
14. The "must win" attitude, which results in the subsidizing of athletes on the part of colleges, is leading to compromises in health, ethics, and educational values.

- 15 The social chaos, real and possible, resulting from failure to solve the problems of intercultural education and desegregation of races in public education is of tremendous importance

We need policies or basic agreements made after considering all the valid data we can gather concerning these problems. We also need procedures or methods for putting the basic agreements into actual practice. These are some of the social functions of all citizens, but it is primarily citizen teachers engaged in organized education who must point the way. In what ways can physical education teachers contribute to the solution of these problems? Do they have any bearing upon *what* and *how* we teach?

General objectives of secondary education

All pupils, regardless of their future occupations, should be able to understand, appreciate the value of, and adjust to effective participation in the activities of our democratic society. Ideally, we should "know something about everything, and everything about something." This is another way of saying that the physical education teacher, and his or her students, should have a good general education, and be able to function with a high degree of excellence in some particular vocational area.

General education is intended for everyone and is concerned with one's nonspecialized activities, no matter what his present or future vocation may be. It is concerned with the total personality—not merely with the intellect but with emotions, attitudes, tastes, and appreciations. It is concerned not so much with what is learned as with the qualities that one develops in the process of learning.

Physical education activities have a real potential for contributions to general education, and since only about ten per cent of the students starting high school eventually go to college, we have a special responsibility to contribute through physical education to the development of all adolescent boys and girls in the following directions:

- 1 To secure and maintain a condition of personal good health and fitness
- 2 To develop effective methods of thinking
- 3 To inculcate desirable social attitudes

4. To cultivate useful work habits and study skills.
5. To acquire a wide range of significant interests.
6. To develop an increased appreciation of the dance, music, literature, art, and other aesthetic experiences.
7. To develop social sensitivity and better personal-social relationships.
8. To use leisure in right ways.
9. To acquire important information.
10. To develop a consistent philosophy of life.

The real test of general education lies in the ability of the student to relate experience and knowledge in one field to problems in another. Are your students learning to see the relationships of physical education activities to health? Adequate community recreation programs to social betterment? Teamwork required in school sports to cooperative citizenship in town "cleanup" campaigns or better playgrounds for children?

General objectives are those which should be the concern of all teachers, regardless of subject-matter areas. Teachers of physical education must contribute to the goals of student development listed above. Unless they have a rather definite idea of what the school as a whole considers educationally important, they will not know how to select and organize learning experiences that may be employed to achieve these ends.

It is hoped that in subsequent chapters we may examine the meanings and insights involved in these general objectives so that the aims and ideals they represent may be more fully realized.

Specific objectives of physical education

In facing situations of everyday living, students need to develop competencies and capacities to maintain good health, to solve problems by reflective thinking, to make moral choices, to express themselves emotionally by wholesome ideals, tastes, attitudes, and appreciations. They have to deal with other persons individually in face-to-face relations and through social participation in groups. Finally, social development is enhanced by intergroup relations, as exemplified by school club federations, athletic team contests, and the like.

All teachers should be sensitive to the developmental needs of boys and girls, but each area (that is physical education, science, mathematics, and so forth) has teachers who by specialized education and experience, are particularly sensitive to certain needs of students. While the mathematics teacher is especially sensitive to the need of students to be able to think quantitatively and to solve problems by mathematical formulas, the physical education teacher is especially sensitive to and contributes to the achievement of the following developmental goals, which we might call more immediate or specific objectives:

1 *Organic power*, the ability to maintain adaptive effort or the ability to meet the physiological demands made upon the organism. We attempt to strengthen muscles, develop the ability to resist fatigue and increase cardiovascular efficiency.

2 *Neuromuscular development*. We attempt to develop gait and sports skills, grace, a sense of rhythm, and improved reaction time.

3 *Personal-social attitudes and adjustment*. We attempt to place students in situations that encourage individual self confidence, sociability, initiative, self direction, and a feeling of belonging.

4 *Interpretive and intellectual development*. We encourage pupils to approach their problems with active imagination and originality, to develop ability to solve these problems by thinking, analyzing, abstracting, and coming to conclusions based on sound evidence. When a high school football coach calls every play from the bench, he is robbing the quarterback of this aspect of development.

5 *Emotional responsiveness*. Pupils get emotional satisfaction and pleasure out of overcoming difficult challenges such as learning to swim or create a new dance pattern, get a thrill out of cooperative success or team work through developing great loyalty to the school or team, or developing aesthetic tastes from experiences in the dance or water ballet. In modern slang the adolescent would probably express this feeling by saying, "I get a 'kick' out of that!"

Interrelatedness of development

What we do with pupils in physical education should be chosen with the numerous interlocking relationships in view. When stu-

dents engage in physical activities it is more than an investment in exercise or handy skills. It is an important investment in social and emotional adjustment. Every aspect of development—physical, social, emotional, intellectual—interacts with the other. We see that motor development in the form of individual, dual, or team sports plays an important role in social development. The social contacts of children and youth are made to a large extent through common motor activities, especially games and sports. Likewise, the degree of motor development and skill is closely related to many emotional features of behavior. We feel emotionally secure when we feel adequate. Physical strength and a fund of skills, good coordination, and a good-looking and attractive physique do not seem to go along with physical cowardice, fear, anxiety, lack of participation, and dislike of adolescent games and sports.

The fact that one thing leads to another is a popular way of mentioning the circular effects of low physical skill at the adolescent level. Fraleigh describes this circle of events and their accompanying effects as follows:

1. The boy with poor physical skills
2. Seeks participation in normal play activities
3. Gains unfavorable self-evaluations and loses group status
4. Tends to avoid further participation in normal play activities because of lack of success and satisfaction
5. Loses opportunities for social and emotional development because of lack of participation
6. Loses opportunities for the development of prestige-lending physical skills because of lack of participation
7. Withdraws to less ego-threatening play activities and less individualized competition.¹

In the subsequent chapter, dealing with recording and appraising the development progress of students, attention will be called to kinds of records which can reveal the patterns of interrelationships between the various aspects of development. What set of circumstances led to social popularity or unpopularity, success or failure, good or poor social adjustment, meek followership or obvious leadership?

¹ Warren P. Fraleigh, "The Influence of Play Upon Social and Emotional Adjustment," *59th Annual Proceedings* (Washington, D. C., The College Physical Education Association, 1955), p. 272.

For every effect there is a cause. We can change conditions (health, social behavior learning) only by understanding the cause and-effect relationships involved. When we discover what causative factors and variables are responsible for the phenomena and control these we can change the effects of which they are a function. This is the beginning of what is called the scientific method.

Discussion

- 1 What social trends and forces operating in American culture have greatest significance for policy making in physical education?
- 2 Discuss the physical education implications of the statement "Man is a biological organism immersed in a cultural field."
- 3 What effect did World War II have upon physical education programs in American secondary schools?
- 4 What determines the soundness of one's philosophy? How can a philosophy of physical education be developed from scientific sources?
- 5 How and to what extent is physical education including athletics influenced by vested commercial interests such as newspapers, sporting goods manufacturers, travel manufacturers, broadcasting and television companies?
- 6 As development supervisors of youth how may physical education teachers foster desirable trends and culture patterns in relation to physical education and athletics rather than be swept along with the tide of popular but often unscientific opinion?

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confusing or even frustrating.

If your automobile engine needs attention, you take your car to the most effective automotive mechanic—one who understands thoroughly the nature and function of the internal combustion engine. Physical education teachers can be no less effective without understanding the nature and needs of their pupils.

How can physical education be a real force in the education of high school youth for effective living in the rapidly changing and complex society which is America? How can we make physical education instruction functional so that it helps youth to develop potentialities for meeting life's situations satisfactorily, helps them to grow, meet their needs, and to solve the problems they face? These are the criteria which ultimately must be applied to determine whether or not our teaching methods are legitimate and the students' school experiences wholesome.

Significance of adolescence

In a simple sense, "adolescent" is applied to boys and girls within an age group that is developing from childhood to adult status. From the biologist's viewpoint, the term "adolescence" usually refers to that period in the life of a boy or girl starting with the beginning of puberty through the maturation of the reproductive function. This spans the years between 12 and 24 but differs between individuals and, of course, between sexes. Later we shall see the importance of understanding the early-maturing versus the late-maturing of boys and girls of the same chronological age, in relation to the physical education program.

Puberty or sex maturation introduces adolescence. The term pubescence refers to the process of becoming sexually mature. Pre-pubesce indicates that the process has not yet started and is invariably associated with the absence of pubic and axillary hair. Pubescence indicates that the process is under way and is manifested by the presence of some straight pubic and axillary hair. The term postpubescence implies sexual maturity and is characterized by kinky, pigmented pubic hair. These particular phenomena are mentioned because Crampton¹ and others have found them to be

¹ C. Ward Crampton, "Physiological Age—A Fundamental Principle," *American Physical Education Review*, 13:150, March 1908.

simple, observable factors which are closely correlated with degree of physical maturation and are easily observed by the physical education teacher in the supervision of shower and locker rooms.

In boys, other factors, such as broadening of the shoulders, change of voice, and the occurrence of seminal emissions, are additional indicators of postpubescence. In girls, the increase in pelvic breadth, the enlargement and change in appearance of the breasts, and menarche (first menstruation), are other criteria of physiological maturation.

For both sexes, one of the most dependable means of determining the degree of physical maturity is skeletal age, found by X-ray photographs of the long bones of the hand and knee. Given two boys of the same age, is one more "ready" for football than another? A study of their respective skeletal maturity would give some suggestions.²

Adolescence is a focal point in human development and is, therefore, an important focal point for the education of the individual. It is the period when boys and girls are beginning to emerge into full possession of their physical, mental, social, and emotional powers and to take on the characteristics we call adult.

The word "adolescent" carries with it social and psychological as well as physiological implications. In addition to referring to years of physiological maturing, it refers to the period of social and personal development which is usually, but not always, correlated with that time of physical change. The late G. Stanley Hall pointed out that children are not small adults and that one cannot hasten the development of the tadpole into a frog by cutting off its tail. Each development period in childhood and youth has a purpose in which certain development tasks must be performed. Our task is to focus our attention on the adolescent period and to contrive physical education goal resources in the form of opportunities, materials, conditions, and experiences so that high school boys and girls may achieve goal satisfactions as they seek to satisfy their needs and progress toward adulthood.

Finally, it is well to remind ourselves that growing up is a bio-social phenomenon. It is a biological process occurring in and greatly influenced by the cultural setting in which it takes place.

² F. K. Shuttleworth, *The Adolescent Period* (New York: Child Development Publications, 1951).

The sequences of bodily growth are more or less universal in all adolescents, regardless of where they may be found. The difficulties and problems of American adolescents, however, are to a great extent due not to their being adolescents, but to their being adolescents growing up in an American cultural setting representing a rather distinct set of values and a particular period of history (war, the military draft, television, rapid urbanization, and automobiles).

The personal reactions and the difficulties young people experience in adaptation or adjustment depend upon many factors, such as the nature of the society, the homes in which they live, the economic conditions, stages of industrial development, and the prevalent values cherished by their peers or age mates.

Life in a complex, industrial civilization, and the lengthened social infancy or dependency needed to prepare youth for more diversified living, makes great demands on the skill of teachers. In this task, the physical education teacher has an important part in aiding youth to meet the demands of maturation and to attack the persistent tasks of life with adequacy and courage.

Age characteristics of high school students

It is difficult to generalize about adolescents as a group, for human behavior and human personality at any age level are exceedingly complex. They are functions of a number of factors or variables. Furthermore, as teachers we must study systematically particular boys and girls, for the diverse character of adolescent behavior and the variable needs of youth at this period of development involve continuous analysis of their individual problems.

Despite the fact that good guidance involves working with pupils as individuals, knowledge of the general characteristics of adolescents and the varied courses by which they progress toward maturity will help us in coming to understand the adolescent.

The following are some generalizations concerning adolescent traits, motives, and attitudes of some importance in planning and organizing physical education experiences:

1. Girls reach puberty about a year and one-half earlier than boys.
2. The maximum growth of girls appears between 12 and 14

years of age and of boys between 14 and 16 years. The period from 12 to 14 years finds girls generally taller and heavier than boys of the same age and generally able to compete successfully in sports.

3. The average age for menarche for American girls is 13 years, 7 months. However, the time at which menarche occurs is determined not by chronological age alone but the girls' development status. The early maturing girls during adolescence are generally physically stronger than later maturing girls of the same chronological age.

4. Similarly, postpubescent boys of the same chronological age show significant superiority in strength over pubescent boys. Here we see the significance and importance of classifying students in terms of their body structure and physical maturity if we want to equalize competition.

5. Boys' strength usually doubles from 13 to 17 years of age. At each age level the strongest is usually about three times as strong as the weakest. The implications for careful consideration of individual differences is here evident.

6. Girls and boys who are early developers and hence more physiologically mature than others of the same chronological age display greater maturity of interests. Interest cycles vary with the individual's age and level of development. The same program or activities, therefore, will not have the same appeal to all pupils even though they are of the same chronological age.

7. Preadolescent boys and girls of about 9 to 13 years of age do not normally prefer coeducational activities. Adolescent girls of 13 to 18 years and boys in this range of a year or two older than girls show an increasing interest in such activities and at the older extremity of the range both sexes voluntarily seek such activity.

8. At the age of 13 there are few sex differences in running speed, broad jump, standing high jump, and ball throw for distance. However, sex differences in these activities emerge and diverge considerably as age advances. Boys improve steadily in all performances through midadolescence but girls, in this period, improve only slightly or decline in their performance in these activities. Decrease in motor abilities on the part of girls may be due to lack of interest and motivation as well as in change in body proportions and in its center of gravity.

9. Although awkwardness and poor motor control are often attributed to adolescence due to rapid and uneven growth, the experimental literature does not support this conclusion. Reaction time studies indicate a steady improvement in reaction up to 18 years and then a gradual leveling off followed by decline in later years. Much of what we interpret as physical awkwardness is no doubt due to lack of social experience, self-consciousness, and embarrassment.

10. Due to the temporary bio-chemical imbalance in the body, largely because of developing sex hormones, acne often appears to plague adolescents just at a time when they place high value on personal appearance.

11. In adolescence, group and group status are major concerns. Desire for recognition is strong. The adolescent peer group—a few companions, a gang, or a social clique—next to the family, provides the chief means of achieving personal security and understanding.

12. Slang, haircut, dress, social dance rituals, and musical tastes make the adolescent feel that he is a distinct and total personality apart from the adult-directed world. Warm friendships and the satisfaction of his basic personality needs come with a feeling of acceptance and belonging in the adolescent world—largely free from parental restraint, overprotection, and dependence.

This is part of the struggle for autonomy, for self-discovery, self-assertion, self-realization, and self-direction, the attainment of which can be successfully accomplished by understanding teachers who provide boys and girls with the resources in games, sports, athletics, camping, and recreation as means of achieving their satisfactions.

Our function as teachers is to provide the goal resources in the form of conditions, materials, experiences, and opportunities that will make desirable goal satisfactions possible for the adolescent. Providing goals and organizing learning experiences is the function of the curriculum with consideration for the maturity level.

It may be helpful to visualize the adolescent as still being in the "process of becoming" by noting the steps in genetic development as indicated in the following table.*

* Charles C. Cowell, "The Adolescent's World," *Developing Human Relations Through Health Education, Physical Education, and Recreation*, edited by Hilda C. Kozman (Washington: American Association for Health, Physical Education, and Recreation, 1951), p. 226.

<i>Child</i>	<i>Adolescent</i>	<i>Mature Person</i>
Beginning to like play in small groups and some interest in team activities.	Decided preference for group games by boys. Girls have had this experience and now prefer more individual sports activity.	Enjoys activity of complex organization.
Gradually widening social contacts, but still rather egocentric. Group consciousness weak.	Allegiance swings to his group, but is not very stable.	Permanent interest and social values well developed.
Relatively little interest in the opposite sex at "pals".	Permanent friendships begin. Friends of the opposite sex; dating.	Makes wise choices and abides by them.
Interests change from asocial to social; from interests in immediate environment to the wider community.	Increasing consciousness of growth toward a new and independent personality.	Able to initiate a task and carry it to completion.
Codes of moral conduct as exemplified in the Scouts, and similar groups are accepted.	Group and groups status are major concerns. Desire for recognition is strong.	Able to organize his behavior in relation to more remote ends.
Social groups, based on interests, rather unstable and change as interests change.	Interest in opposite sex based on sex consciousness. Most girls dating and most boys willing but still somewhat afraid of showing their real interests.	Able to inhibit emotional response and defer gratification of an immediate desire.
Goals and purposes rather immediate. Values sought are not deferred values.	Organizations are not always democratic despite the drive toward group activity.	Has developed a philosophy which gives him a satisfactory "world picture" and an understanding of himself in relation to this picture.

<i>Child</i>	<i>Adolescent</i>	<i>Mature Person</i>
Personal sacrifice for the good of the group rather difficult. Rights of others frequently ignored.	Social groups become more stable. Social values still superficial.	Action dependent on reflective thinking and suspended judgment.
	Curious and interested in understanding the intricacies of human relations and "doing the right thing" to foster them. Searches for models and ideals.	Shows concern for the rights and personality development of others.

Problems and concerns of adolescence

The purpose of education is to help people meet difficult situations with success, to solve life's problems satisfactorily, to grow, to meet their needs, and therefore make wholesome adjustments to the persistent problems of living in a complex world.

A problem represents a situation for which we have no ready answer. It occurs when an obstruction of some sort keeps us from reaching our objective or achieving our purpose. Problems are innumerable. It is how the individual solves them that makes the difference. How he solves them depends upon a number of factors, which include his understanding of himself and of the problems, his background of knowledge and skill, and his attitudes and ideals. How he uses his knowledge and skill will depend, in the last analysis, upon how he feels about the situation—his attitudes and ideals, his philosophy or sense of values. A real education is an emotional as well as an intellectual experience. The direction of the mind is often more important than its progress. Good teachers can help determine this direction.

Studies of various kinds have focused attention more objectively on the nature of adolescent problems. As teachers we can more readily help young people solve their problems when we identify the nature of the problems and assist them in finding the resources for their solution in themselves, in the environment, or in teachers and advisors. The needed resource may be more strength and skill,

self-confidence, a new idea, an improved understanding, a new way of dressing one's hair, or a change in the goal sought.

To be more specific, we shall try to list some of these problems and concerns under three headings—general, boys, and girls, "general" implying that they are a concern of both boys and girls. Obviously, there is some overlapping in all categories. The per cent of the items taken from a much longer list and indicated below represents the per cent of some 15,000 teenagers who personally stated that these were problems for them. The important question to answer is: What can teachers of physical education contribute in the way of goal resources to aid adolescents in relieving their tensions and solving their problems?

General *

	Per cent
1. Wish I knew how to study more effectively	51
2. Wish I were more calm when I recite in class	56
3. Have difficulty in keeping my mind on my studies	53
4. Would like to obtain practical work experience	49
5. Want people to like me more	54
6. Want to make new friends	50
7. Wish I were more popular	42
8. Cannot discuss things with my parents	20
9. Afraid to tell my parents when I have done something wrong	19
10. How far should high school students go in love relations	25
11. My parents avoid discussing sex with me	20
12. I wonder if high school students should pet and make love	18
13. Need more information about sex	15
14. Concerned about losing or gaining weight	52
15. Want to learn how to select food that will do me most good	25
16. Concerned about skin (acne, etc.)	33
17. What can I do about race prejudice	25
18. How can I make the world a better place	30

* H. H. Remmers and Benjamin Shulberg, *Examiner Manual for the SRA Youth Inventory* (Chicago: Science Research Associates, Inc., 1949).

Other studies⁵ indicate in addition the desire to be skillful in sports, to keep in good health and physical condition, to get along with and understand other people, to make friends and feel that they belong to a group, and to learn to control themselves and be good sports.

Boys⁴

Per cent

1. Want to improve my posture and body build	50
2. Do not have a girl friend	41
3. Bashful about asking girls for dates	34
4. Should I go steady	19
5. Seldom have dates	48
6. Want to know about the possibilities of being drafted	57

Boys definitely want to become good all-around athletes, to be especially skillful in some particular sport, to develop muscle, and to understand the strategy or fine points of games.

Girls⁴

Per cent

1. Want to improve my figure	50
2. Do not have a boy friend	30
3. Feel I am not popular with boys	23
4. Want to know if I should go steady	25
5. Seldom have dates	39
6. Would like to know how to refuse a date politely	36

Girls are much more posture conscious, much less interested in muscle.

This is but a brief reference to specific items which represent problems and concerns. In establishing personal relationships, such things as making and keeping friends, popularity, techniques of how to approach the opposite sex in order to make an impression, how to win friends and influence people, the solution of conflict resulting from peer or gang standards and the standards suggested by parents, are very important to adolescents.

⁵ C. C. Cowell, "Student Purposes in High School Physical Education," *Educational Research Bulletin*, April 5, 1939; C. C. Cowell, A. S. Daniels, H. E. Kenney, "Purposes in Physical Education as Evaluated by Participants, Physical Education Administrators," *Research Quarterly*, October 1951; and Ross L. Mooney, "Surveying High School Students' Problems by Means of a Problem Check List," *Educational Research Bulletin*, Volume 31, 1942, pp. 57-69.

In establishing autonomy, or "cutting the apron strings," there are the problems of parental domination, achieving some financial independence (part-time work and so forth), being accepted on the adult level, being free to make decisions, establishing allegiance and loyalties, and preparing for one's life work by excelling in some skill.

Accepting oneself as a male or female and understanding the biological processes involved in origins and the birth process, the sequences of childhood, youth, and adulthood, the question of the broad range of individual differences within the status of normal in weight, height, strength, and growth patterns, all are important personal problems. The power and sudden shifts of one's emotions, feelings of jealousy, envy, love, and similar sentiments, all carry potential psychological effects and emotional distress.

The facts of the interrelatedness of development have been stressed previously. The physiological changes that come with adolescence are closely related to the mental, emotional, and social development. As we help youth understand themselves as integral parts of the cycle of life, they will be able to adjust more readily to the larger social adult scene and the problems that go with full maturity. This leads us to an attempt to clarify the important concept of needs.

Needs of adolescence

Any biologist would perhaps agree that education must work in harmony with evolution. Physical education at the high school level is a culmination of something that started in the kindergarten and developed through the primary, intermediate, and junior high school grades. While all interests are learned, the individual's level of maturity has a marked bearing on the relative ease of learning them. We do not try to teach second graders the zone defense in basketball. Our concern with the stage of adolescent maturation or development is somewhat apparent from examination of problems, interests, and development traits mentioned in previous paragraphs.

The simplest definition of need is "the absence of something, which if present would give satisfaction." When someone says, "I need a shave," or "I need a permanent wave," we assume that if the man does not get a shave or the lady a permanent wave, he or

Other studies³ indicate in addition the desire to be skillful in sports, to keep in good health and physical condition, to get along with and understand other people, to make friends and feel that they belong to a group, and to learn to control themselves and be good sports.

Boys⁴

	Per cent
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2. Do not have a girl friend	41
3. Bashful about asking girls for dates	34
4. Should I go steady	19
5. Seldom have dates	45
6. Want to know about the possibilities of being drafted	57

Boys definitely want to become good all-around athletes, to be especially skillful in some particular sport, to develop muscle, and to understand the strategy or fine points of games.

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³ C. C. Cowell, "Student Purposes in High School Physical Education," *Educational Research Bulletin*, April 2, 1929; C. C. Cowell, A. S. Daniels, H. E. Kenney, "The Purposes in Physical Education as Evaluated by Participants," *Physical Education & Sport Services*, December 1931; and Anna L. Murray, "Surveying High School Students' Problems by Means of a Problem Check List," *Educational Research Bulletin*, Volume 31, 1932, pp. 57-69.

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she will feel uncomfortable, disturbed, unhappy, or under tension until they restore their internal equilibrium by taking care of these conditions. A shave for a man or curled hair for a woman in many cases satisfies social and ego needs or psychic hungers. Here we refer to learned or acquired needs, social or psychogenic needs. Those needs that represent tensions coming from our interpretation of something outside the organism are largely determined by social factors, that is, by the influence of social pressure, current fashion, custom, tradition, "what the Joneses do." These socially induced needs are related to the desire for recognition, social status, and the like. They represent social value and meaning. For example, basketball in Indiana is charged with social meaning and value for many adolescent boys because it satisfies certain "ego needs"; it gives them a sense of achievement, belonging, group status, and recognition.

Needs are variously defined as "persistent life problems that are experienced or anticipated by all or most youth" as "any requisite to a normal wholesome functioning of an individual in our culture" or the "demands the individual makes upon the surrounding world." The terms "needs," "drives," "wants," "tensions," "motives," "desires," "values," "urges" are all vaguely synonymous. An understanding of these is exceedingly important for the teacher, for when we motivate pupils we create within them a certain psychophysical state or condition of disequilibrium that results in efforts on their part to do something to make the necessary adjustments to satisfy the motives we have implanted. We develop in pupils pride in performance, a sense of belonging, a feeling of success and achievement, and a sense of adequacy and security. Adjustment is the process by which organisms meet their needs. Teachers help pupils make wholesome adjustments by helping them to meet their biological and personality needs in socially accepted ways.

DYNAMIC USAGE OF THE TERM "NEEDS"

When we ask what fundamental forces that seek expression and satisfaction are active in adolescents we are asking about basic motives in conduct or basic personality needs.

The truly basic needs are those which are biological, such as activity, food, sex, and sleep. These are basic because if they are not eventually satisfied either the organism or the species will not

survive. Efforts to satisfy these in a socially accepted manner lead to the seeking of employment, marriage, and the general stability of our society.

Courtesy John Marshall High School, Rochester, New York



Learning the techniques

The social or ego-satisfying needs in our culture are represented by desire for achievement, accomplishment, recognition, approval, attention, group status, adventure, novelty, excitement, being wanted, affection, appreciation, a sense of worth, a sense of adequacy. These represent some of the raw materials of human nature which act as basic motives in conduct. Although we no longer speak glibly of instincts, we recognize certain unlearned cores of behavior that are powerful directional forces in our lives. These we refer to as basic personality needs. We now ask, "What opportuni-

ties and experiences do children and youth need in order to develop into wholesome personalities?" This brings us to the implemental usage of the term *needs*, where the physical education and the recreation director have extremely important roles to play, for the activities they encourage become the means of adjustment.

IMPLEMENTAL USAGE OF THE TERM "NEEDS"

We satisfy our motives, impulses, and drives and resolve our tensions through our relations to things and persons. These become the means or implements or conditions that satisfy the needs mentioned in the paragraphs above. This usage is given when we try to list what youth must have for healthy growth and to function normally and wholesomely in our culture.

Mental hygienists tell us that excessive denial of one or more of the needs mentioned above tends to disorganize our emotional behavior and affects to various degrees our mental health and the efficiency of the learning process. In a later chapter dealing with aspects of learning, we shall see that responses that contribute positively to the individual's needs (physiological or social) tend to be retained, while those which thwart these needs tend to be eliminated. Physical education is functional when it meets the needs of a specific individual in a specific situation. Likewise, under these conditions learning becomes more permanent. On the following pages are listed some rather loosely categorized needs of adolescents. By what specific means may these be satisfied in physical education situations? In each case try to identify a motive or drive which each activity would satisfy.

Physical needs

1. To have an adequate and balanced diet.
2. To develop muscle and physical strength (stronger in boys).
3. To develop a symmetrical and attractive physique or figure.
4. To develop endurance and vitality, to be able to resist fatigue and be full of energy or pep.
5. To move with skill and grace.
6. To know how to relax and rest.
7. To be skillful in several individual, dual, and team sports.
8. To engage in activities of an inner-directed nature, rather than those of an other-directed nature.

The satisfaction of many of the needs to follow is contingent on or conditioned by the satisfaction of these needs. This again emphasizes the interrelatedness of the several aspects of development. Physical strength and skill in games often determine the student's place in the group and the ultimate opportunity for more adequate social development, self-confidence, and the like.

We must emphasize that these become the problems and concerns of many American adolescents but would not necessarily be the problems and concerns of adolescents in all countries. As we have said, many needs are socially and culturally derived, while others are biologically derived and are universal.

Social needs

1. To have opportunity for social participation of all kinds (team sports, talent shows, orchestra, club, and so forth).
2. To have close friends of the same sex.
3. To have friends of the opposite sex.
4. To have an opportunity to appear in a socially applauded role and to please others of your own and the opposite sex by some prestige-getting or exclusive role. To gain recognition.
5. To achieve the acceptance and approval of one's peers.
6. To belong to some desirable and particular group to which loyalty may be given.
7. To have the affection and security of one's parents and to earn their confidence, yet to have freedom to make many of one's own decisions.

Here again we note the overlapping and interrelatedness and interdependence as we try to adhere to specific categories of needs.

Emotional needs

1. To be able to engage rather objectively in self-appraisal and to act on the basis of knowledge of one's personality assets and liabilities. To develop insight into one's own personality.
2. To be able to stand on one's own feet, make one's own decisions and choices, and to achieve self-direction and independence.
3. To be protected from the ravages of excessive and unequated competition.
4. To be free of guilt as a result of not understanding the growth cycle and the rapid physiological urges and changes taking place during adolescence.

5. To minimize fear of failure, punishment, criticism, and sarcasm by proper emotional climate in the gymnasium or on the playing fields.
6. To feel that one is accepted, wanted, and belongs.
7. To know the definite limits of one's freedom by generally agreed-on requirements, such as certain codes of behavior or training rules in athletics.
8. To broaden one's interests and appreciations by trying different activities.
9. To have opportunities to accept responsibility and leadership.

Learning needs

1. To understand what is involved in growing up, physically, psychologically, and otherwise.
2. To understand individual differences and know that we can be quite different in height, body type, and complexion, and still be normal.
3. To understand how personality evolves and why people may like or dislike us.
4. To examine personal and social values in our culture and determine which ones we ought to accept and which we ought to reject.
5. To understand the elementary principles of the physiology of activity or exercise.

Good physical education is a bio-social phenomenon and is interested in both the biological and social adjustment of people with all that this involves in human efficiency, health, happiness, and effective living.

What means and conditions should be provided in physical education so that the imperative development needs of boys and girls may be met? This is the major function of the teacher, the curriculum planner and developer. Merely throwing out the basketball day after day is not enough.

Discussion

1. Explain the statement, "Education should be in harmony with human evolution from birth to death."
2. Illustrate some wasted efforts of physical education teachers who push children or youth into learning experiences before they are ready to profit by such instruction. Explain the concept of "a teachable moment."

3. Is it true that although many high-school students are biologically adult we treat them sociologically as children? How can physical education staff members provide situations which will enable adolescents to assume more mature social roles normally denied them in adult society?
4. Games and sports have been referred to as "a purge for the soul." How can these activities help solve some of the problems of frustration resulting from restrictions imposed upon the maturing adolescent by a highly complex industrial adult society?
5. Compare the problems of the adolescents growing up in America in contrast to adolescents growing up in a more primitive culture such as found on a South Sea island.
6. Two girls are both 14 years of age. One is an early maturing girl and reached menarche at 13 years. The other is still prepubescent. What differences in physical, social, emotional, and intellectual interest attributes would you expect to find in the two? What are the implications for the physical education curriculum?
7. How does disproportion of growth make for psychological difficulties in adolescents?
8. What personality and physical performance differences would you expect to find in early-maturing boys as compared with late-maturing boys of the same chronological age?
9. What school-centered corecreational activities supervised by physical education teachers may contribute to the social and heterosexual adjustments of high school youth?
10. What do we mean by functional education? When is instruction in physical education functional?

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Learning potentials in physical education

TEACHING AND LEARNING represent two aspects of the process we call education. Dewey has said, "To teach is to cause to learn." To learn is to become different, for learning is the process of changing behavior through experience. As the organism tries to meet its needs by a process of adjustment, it reacts to its environment. This interaction between organism and environment is called experience. Experience, in this sense, is not merely the best teacher; it is the only teacher. We are concerned about experience in physical education which results in wholesome or

Learning and achievement on the part of an individual in physical education begin with a sense of something lacking, a disturbed feeling, a dissatisfaction which results in activity and accomplishment in a certain direction. There are many active needs to which we may ascribe this search for a solution.

History and mathematics teachers are not enthusiastic athletic supporters. They say that athletics and club activities call forth strong motivations on the part of students and channel most of students' energies in the direction of those activities. But do physical education teachers have an easier task in motivating pupils than do history and mathematics teachers? The dangers of using the wrong kind of motivation are real, and often unrecognized. We should not employ the notion of "beating someone else" to energize activity. Neither should we use external incentives such as school marks, cups, ribbons, sweaters, and other prizes.

desirable changes in behavior.

While psychology describes the principles of learning, the good educator as a social scientist must describe the conditions. How people learn will affect what they learn, how much they learn, and the degree to which they retain what they learn. Method, or how the teacher organizes learning experiences, greatly influences learning, which results from the application of fundamental principles. Let us examine some of these and try to apply them to practical physical education situations.

Principles of learning and teaching

We are reminded again that principles represent statements based upon the best information currently available that lead to effective action. They suggest how any learning undertaken should be approached to be effective. One's concept of learning determines largely the kind of physical education curriculum one will have. Application of the following seven principles of teaching physical education should make for effective learning:

1. *Learning is always related to something.* The goal or purpose is perhaps the most important single factor. We learn those things that are significant to us. We grow or develop by participation in experiences that are meaningful and purposeful. We are moved to learn by a need or a situation calling for some satisfying activity. Interest increases learning and is evidence of moving in the direction of achieving one's purposes.

2. *Learning is an active, not a passive, process.* It results from doing something—thinking and acting, responding to inner stresses, tensions, urges, and wants—in an attempt to make an adequate adjustment to the environment. Activity is a response which enlists the interest of the learner because of his values inherent in this interest. Each individual must learn by his own activity. Each new learning changes the structure of the organism in some way.

3. *Learning is never singular.* We learn from the total experience and the environmental setting in which the experience takes place. The whole person reacts to a total situation. The resulting experiences modify the learner's attitudes, ideals, knowledge, and skill. For example, when a pupil learns to swim he not only develops the

necessary motor coöordinations but develops attitudes toward swimming as an activity, toward chlorinated water, toward the teacher, and toward his classmates. These are the results of the emotional responses to the total swimming situation. The social-emotional climate of the pool or gymnasium determines, in a large part, the resultant incidental or concomitant emotional learnings. It also determines the effectiveness of learning to be skillful or to understand.

4. *Learning involves practice or provisional trials with the desired goal in mind.* Successful responses are retained and learned. Perfection of more complicated motor skills, such as typing, shooting baskets, or swimming, requires numerous repetitions of the correct forms of movement. The learner not only must acquire knowledge of the character of good performance (form), but he must also attain considerable skill in producing it by practice. Here, skilled direction on the part of the teacher or coach is essential. The late Knute Rockne's dicta were, "Tell them! Show them! Let them try it! Correct them!" He probably added, "Let them do it again and again!"

5. *Learning of a particular kind occurs only when the student is mentally, physically, and emotionally prepared for that particular experience.* Children learn readily when they are healthy, well-adjusted, mature enough, and interested. Readiness refers to the drive to accept learning experiences or to the stage of development at which the student is most able to profit by instruction, but readiness to learn is important at all levels. At what age should pupils begin to receive tennis instruction? Obviously, physical maturity is a basic factor, but we also develop readiness through experience. The child of tennis-playing parents, of a tennis-playing community will, no doubt, be ready for tennis instruction at an earlier age than most children. In our curriculum, we start with games of low organization (tag, dodge ball, and so forth) in the primary grades, move to "lead up" games (net ball, "21", and so forth) in the intermediate grades, and finally to the higher organized team games.

At each level of development these particular activities contribute positively to the physiological and social needs of the individual at the time, are satisfying, and therefore facilitate learning.

6. *The rate of learning is directly associated with the appropriateness of the outcomes (rewards) to the needs of the learner.* Motivation is central in the curriculum because it is in response to basic

needs that man adapts and learns. We must gear the physical education curriculum in the high school to the psychological needs of adolescents. This is what is involved in motivation.

Why is team and club membership so important to the adolescent? Why is competition highly individual and at the same time intensely cooperative at this period when team play and organization are prominent in their thinking and action?

Chapter II laid the basis for an understanding of motivation in relation to learning. Motivation is the act of increasing learning by creating the condition within the individual which results in specific goal-seeking behavior in the direction of satisfying such motives as the desire for achievement, self-esteem, recognition, belonging, and group status. To what extent do physical education activities satisfy these motives?

7. *Self-confidence is important to learning.* Boys and girls must believe that improvement is possible and that they can achieve their goals. The old adage, "Nothing succeeds like success," is still sound. The learner must feel that others are interested in his accomplishments. Praise and encouragement are more effective in securing improvement than criticism or sarcasm, for students wish to know how well they are doing and their current status in achievement.

Surely physical education teachers can help young people conquer feelings of inadequacy and feel increasingly sure of themselves. Self-confidence, it has been said, is the very basis of all achievement.

"To teach is to cause to learn," and to learn is to become different. As guardians and developers of human personality and as development supervisors, we cannot cease to examine the ways and means of making our teaching more effective so that our pupils will learn more effectively.

Relation of learning to needs

Motivation involves the various physical and psychological forces of human behavior. In our discussion of the needs of adolescents, we examined some of the factors which determine the behavior of American boys and girls at this stage of development. We behave in terms of our necessity to satisfy needs and wishes, to reach goals,

and to resolve tensions. What motives are operating when a boy leaves his summer cabin at the cool lake and comes home to practice early season football under the hot August sun? What motives are operating when a girl joins the modern dance group and practices strenuously for an exhibition program? Motives are directional forces within individuals which result in moving the individual in the direction of satisfying some need or achieving some goal.

Physical education and sports activities in our society channel our basic drives into satisfactions which, while related to organic urges, such as the tendency of all human organisms to be active, to explore, to seek new experiences, also lead to socially approved and desirable expressions. Physical prowess, games skills, and an attractive physique or figure, because they are valued socially, come to be desired by individuals. They result in satisfying such motives as achievement, a sense of mastery, group status, recognition, and prestige among adolescents.

To summarize the statements made above and implied in previous chapters, learning may be said to be dependent upon four conditional factors. For practical purposes, let us think of tennis.

1. The pupil must want something, feel a need, be motivated or stimulated to action. The boy's girl friend may be an excellent player.

2. The pupil must do something in the direction of the satisfaction of the motive. He must try to make an adjustment, to satisfy his need or to reduce the tension set up by his motive. He buys a racket and enrolls in the class.

3. The pupil needs some cues, such as suggestions from the teacher, observation of others, motion picture films, pictures, or reading about tennis. These reinforce the readiness to try and give direction to the activity in progress. As the pupil notices various things, he directs his movements accordingly, gets satisfaction from his successful responses and displeasure with his unsuccessful ones, retains the former and gradually eliminates the latter. He anticipates the source of his successful movements by "insight" with the help of cues, gets satisfaction out of the results, and begins to improve.

4. The pupil feels rewarded by his successes and progress in the form of pleasure. He feels more adequate on the tennis courts. A

feeling of insecurity and awkwardness is now replaced with a pleasurable feeling of confidence and achievement. He is achieving his goal—to play tennis—and satisfying his need—to be able to play with his girl friend.

Courtesy Norfolk City Schools



Work now for fun later

Learning is reinforced by reward in the form of satisfaction. Thorndike called this the "law of effect." The rewards here were recognition by friends, the esteem of his girl friend, a sense of mastery and achievement, and many others. Each reward or reinforcement increases the probability of proper tennis responses on future occasions.

In the table that follows, Woodruff describes, in a very helpful manner, the sequential steps in learning.

SEQUENTIAL STAGES IN LEARNING¹

1	2	3	4	5	6
Motivation within the learner makes him receptive to stimuli.	A goal becomes related to the learner's actions.	Tension arises. A. Energy is released within the learner; he is ready to act. B. The barrier prevents an appropriate discharge of the energy and creates tension.	Learner seeks an appropriate line of action to reach goal. A. In every situation there are a number of possible ways of acting. B. The selection of one of these ways of acting will involve elements of chance and/or analysis. C. When the selection is made action toward the goal is attempted. D. If the selected line of action is inappropriate steps A, B, and C will be repeated until an appropriate action occurs. E. When an appropriate action occurs it will involve: 1. Some degree of success in terms of the goal. 2. A sense of satisfaction and a reduction of tension to the extent that the motive is satisfied.	Learner fixes the appropriate line of action. A. Skills are acquired by drill or practice. B. Concepts are developed by becoming familiar with the referent. C. Memorization is accomplished through meaningful repetition. D. Tastes and preferences are established by the satisfiements or annoyments of the experience. E. Ability to think is a product of A and B above.	Inappropriate behaviors are dropped. A. Yielding no satisfaction, they lose attractiveness.
				Speed of Learning Varies A. May be relatively sudden. B. May be very slow. C. Depends on: 1. Nature of the problem 2. Degree of motivation. 3. Capacity of the learner.	

¹ Asahel D. Woodruff, *The Psychology of Teaching* (New York: Longmans, Green & Co., Inc., 1948), p. 61.

Every learning situation involves vocational, intellectual, and emotional relationships. It involves purpose, insight, and feeling. Strang, in six steps, places the psychology of learning in a nutshell when she applies it to health education.

1. Know what is the healthful thing to do.
2. Know why it is important to do it.
3. Want to do it.
4. Know just how to do it.
5. Do it.
6. Get satisfaction from doing it.²

For physical education we might replace the "healthful thing" with the "skillful thing," or the "sportsmanlike thing," or the "democratic thing." We may apply these principles to whatever phase of the program toward which we wish to direct learning.

Kinds of learning in physical education

The objectives of physical education mentioned on page 16 can also be expressed as abilities, abilities to resist fatigue, to exhibit strength, to be skillful and graceful, to understand, to get along with others, to be sociable, to think on the spot, to analyze and conclude, to value fellowship, to be cooperative, and to control one's temper.

As a teacher, ask yourself, "What learning activities will be most effective in developing each type of learning? What are the ingredients of each type of learning?" Learning is reacting, but the nature of the reactions influence the kind of learning. We should, therefore, focus our attention upon the reactions which determine the character of each type of learning.

As previously implied, the various aspects of development (physical, social, emotional, intellectual) are interrelated. Likewise, types of learning are not entirely distinct; many learning situations involve a combination of several types of learning. Let us think of a baseball game and illustrate some of the types of learning involved and note the interrelatedness among the components:

One becomes involved in learning prompt motor responses (skills), in catching, throwing, and batting, distinguishing between

² Ruth Strang, "The Six Steps of Learning Healthful Living," *Journal of Health, Physical Education, and Recreation*, February 1956, p. 7.

a curve ball and straight ball, and making judgments of distance, time, speed, and space (interpretation of sensory experience—percepts), remembering the signals, rules, and plays (prompt mental response—memory), deciding when and how to try for a double-play or use a "hit and run" (understanding, problem solving, use of inference), learning to put aside one's personal whims for the good of the group and to accept the official decisions without flaring up (modification and control of emotional responses), appreciating one's friends, enjoying baseball as a game, developing loyalty to the team and school (development of attitudes and ideals—the personal attributes of a good citizen).

Above has been illustrated the fact that different learning outcomes, such as information, knowledge, skills, attitudes, interests, ideals, appreciations, problem solving, and thinking, are all involved in physical education and athletic activities. In Chapter VIII more specific techniques will be suggested for deriving these outcomes.

Teaching for the intangibles

By intangible we mean something difficult for us to define or formulate or measure objectively. We might think of character, sportsmanship, or citizenship, which are heavily laden with personal attributes such as loyalty, appreciation, ideals, and attitudes. These call for certain kinds of emotional responses that are difficult to measure or appraise yet are accepted as highly desirable in life and education. Teachers become deeply involved with these learning outcomes in moral-social education through physical education activities, yet it is in this very human side of education that we exhibit our poorest techniques and our least notable achievements.

Perhaps we do not understand this type of learning. We preach instead of teach.

An individual imbued with the ideal of sportsmanship and fair play exhibits some emotional reaction when this ideal is violated. He wants to stand up and defend his ideal. How does one learn to value fair play? Butler states,

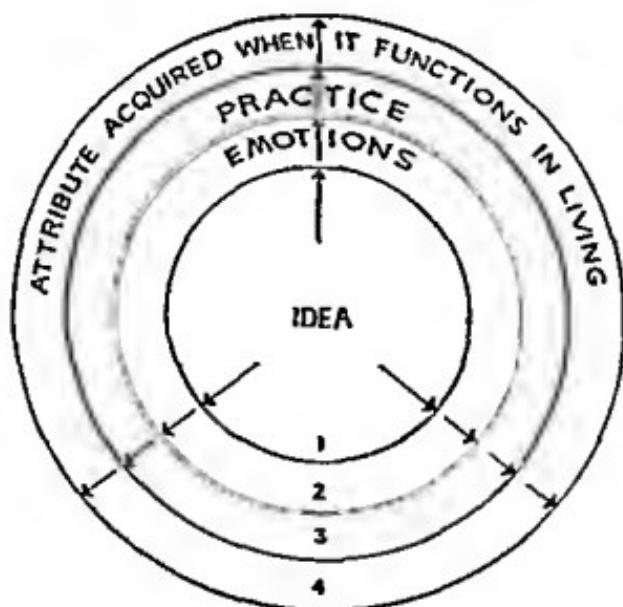
"You learned to believe in and stand for fair play just as you learned to spell, write, or figure, yes, you learned fair play, but different activities were utilized. The chart will assist you in tracing backward the activities employed."

Sequence of stages in analysis

4	3	2	1
The idea of fair play dawned upon you. You heard about, read about, or saw it. You became conscious of it in your living. You thought about it. You recalled situations involving fair play; there really was such a thing in living with others.	You began to feel that fair play was right; your best friends played fair. You were sorry you did use dishonest means to win; you were angry when another won from you by foul means. You felt that you would be fair; you resolved to be.	You practiced fair play; fair play became a rule in your conduct with others and others with you. Each exercise of fair play made you a stronger believer. You felt more deeply its value.	You interfere when fair play is violated. You play fair yourself, and you want to see fair play in all human relationships.
1	2	3	4

Sequence of stages in teaching

In directing the learning of pupils to develop personal attributes, either to influence their conduct or their appreciation, the teacher will follow the reverse order, as indicated in the preceding chart. Figure 1 shows this growth.



It must be admitted that the emotional type of learning is the most difficult to direct, vastly more difficult than the sensory experience, memory, motor, or problem-solving types. It can be determined quite definitely what should be done to direct pupils to acquire motor skills or to understand geometry problems. It is quite easy to discover if these have been sufficiently learned; it is relatively easy to discover if pupils can and will use these in their lives. But not so with personal attributes!*

Butler illustrates nicely the importance of an *idea* as the beginning point of all learning, the necessity of arousing some emotion connected with the ideal of fair play, the necessity of opportunities to practice, develop, and apply the mental and emotional learning in the first two steps by creating an environment which will afford opportunities, encourage and provide active initiating and formulating ways of exercising this attribute correctly and making it personally and socially satisfying. Finally, the physical and mental processes employed in developing the attitude of fair play reach their ultimate stage when they function in daily life.

Obertcuffer⁴ and his students have made suggestions indicating the many sides to this problem and the different personalities involved when sportsmanship in athletics is the attribute under consideration.

In an effort to improve the contribution that high school sports participation may make to the social development of young people, this group attempted to fix responsibility for teaching and encouraging sportsmanship in a rather clear-cut fashion. Rather extensive lists of "shoulds" and "should nots" were developed under the following headings:

- The responsibility of the coach
- The responsibility of the players
- The responsibility of officials
- The responsibility of students
- The responsibility of the team captain
- The responsibility of cheer leaders
- The responsibility of the principal

* Frank A. Butler, *The Improvement of Teaching in Secondary Schools* (Chicago: University of Chicago Press, 1946), pp. 122, 123 (copyright 1946 by The University of Chicago).

⁴ Delbert Obertcuffer, "Sportsmanship—Whose Responsibility?" *Journal of Health and Physical Education*, October 1948, pp. 543-545.

The responsibility of the faculty manager

The responsibility of the athletic director

The Board of Education

Press and radio

Civic leaders and groups (alumni, booster clubs,

Lions, Kiwanians, Rotarians, Chambers of Commerce)

If each individual and group included in the above list would consistently practice the "shoulds" and avoid the "should nots" mentioned in the article, students and players would surely be greatly influenced by the unity of values and purpose concerning sportsmanship in their total social environment. Pupils would absorb these values and purposes naturally into their own philosophies of life because nowhere in the community would they find inconsistencies in the social behavior people value and call sportsmanship.

Discussion

1. If we assume that our behavior is motivated by our efforts to satisfy basic needs, are we always conscious of the basic needs we are trying to satisfy? Why do students need help in self-appraisal?
2. Why are you willing to work hard to achieve certain goals? What do you get out of these strenuous efforts? As you analyze your own motives, do you come to a better understanding of the motives of your pupils?
3. Analyze the actual motivations that may make a youth want to make a wise choice of health practices.
4. What is your favorite hobby? How did you come to be interested in it?
5. Why do students show a great deal of imagination, initiative, and co-operation in planning, arranging, and decorating for a school dance following a game, yet find few effective methods or show little interest in cleaning up and replacing furniture after the dance?
6. What do we mean by "diagnostic and remedial" teaching in physical education? Should not all teaching be diagnostic?
7. What happens when we point our teaching too much toward tests and examinations? Is this conducive to permanence of learning? Explain.
8. Physical education teachers are engaged in teaching motor skills. Take some specific skill and indicate how you would apply Strang's six principles of learning to it.
9. What possible effects may the extensive advertising of alcoholic beverages and tobacco in connection with athletics have upon youth?
10. Discuss the statement, "What people do with the facts we give them depends less on the validity of the fact than on how they feel about it."

11. If you seriously wanted your physical education and athletic program to be an agency of moral training and you were given full opportunity to do what you thought best, just what would you do? Does athletic participation, as such, develop character?

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TASK OF THE PHYSICAL EDUCATION TEACHER

Courtesy Indianapolis City Schools



Recently I met a physical education instructor of a very reputable high school in Western New York. I asked him what he did in the gym. He replied, "I teach basketball." "Why do you teach basketball?" I politely inquired. He smiled patiently and said, "You see, I'm the gym teacher." "Yes, I understand, but I'm interested in what you consider to be your function as a gym teacher. What do you really do for kids in your gym class?" "Oh, I see," he said. "I teach them the rules of the game and how to shoot baskets." "Oh, I see," I said, and I did.

—NATHANIEL CANTOR



The high school teacher and his job

TEACHING IS THE guidance of human growth and development. If "to teach is to cause to learn," we cannot say that we have taught unless someone has learned. Instruction is the stimulation, direction, and guidance of pupils by so organizing their environment and experiences that the most effective learning results. The teacher only sets the stage; the student reacts and learns, for education must come from within and is not imposed from without.

Teaching, in any course, is the contact between a personality (the teacher)

Competitive athletics spotlight the news, but physical education programs for all pupils generally have poor public relations. Public relations is the art of interpreting physical education so that taxpayers and parents will recognize the importance of good school physical education programs. There are many specific procedures and means that teachers, supervisors, and administrators might use to improve public relations in physical education.

A number of parents and educators tend to scoff at the idea of teaching the "whole child" or teaching "life adjustment." They claim that, to be effective, teachers must sharpen their focus and define carefully the limits of their instruction; that is, physical education teachers should teach the rules and the skills of games and sports and not be concerned with adjustment or the whole child. But we are as interested in what field hockey does for Mary as well as what Mary does in field hockey, or as interested in what basketball does for Joe as well as what he does to the basketball. We are directly concerned with the personal development of our pupils.

and a group of differing personalities (the pupils) in which the imparting of knowledge and skill is less important than the meaning that the teacher gives to the facts by his attitude, interest in his job, and the emotional climate he creates in the gymnasium or on the playing fields. The center of motivation in the school is the teacher.

The quotation on the preceding page implies certain beliefs and leads us to discuss briefly the importance of an educational philosophy.

Importance of an educational philosophy

John Dewey has said that "Philosophy is reflection upon social ideals and education is an effort to realize these in action." William James defined philosophy by stating that "Philosophy is only thinking about things in the most comprehensive possible way."

When teachers of physical education ask questions such as, "What kind of personality is desirable in a democracy and in what directions should we seek to direct the multifaceted potentialities of children by means of physical education activities?" or "What are the basic values underlying physical education and what should its outcomes be?" they are involved in educational philosophy.

Philosophy has to do with judgments and problems of value. Since values are the most important motivating factors of life, philosophy provides our source of direction. It is the source from which practice springs. The more carefully we have thought through our philosophy of physical education and made it our own, the more intelligent and effective will be the teaching practices that result. The most important thing about any person is his philosophy; for his philosophy sets the scale of values and shapes the pattern of his thinking, living, and teaching.

As philosophers and physical education teachers, we must examine all available data from anatomy, physiology, sociology, cultural anthropology, mental hygiene, human biology, and a myriad of other sources, and speculate, as philosophers, on their meaning for life and growing organisms. We must decide what physical education is all about and what it can contribute to making life richer and more effective for our pupils here and now.

Tasks of physical education teachers

The quotation by Cantor preceding Chapter IV illustrates the fact that one always teaches a child something specific or helps a child adjust to a specific problem rather than to life. As he learns these, however, he is also acquiring certain fringe benefits in the form of concomitant learnings.

Although we speak of character, health, and citizenship as ultimate or over-all goals or general objectives, we should not confuse the student by focusing his attention on too many things at once. As teachers we should constantly keep in the backs of our minds the goals of general secondary education, realizing that these are achieved only through immediate and specific objectives such as learning the rules and shooting baskets.

Cantor would say that, as particular teachers, our main function is to help the student to learn a particular content, but this particular content must always be seen in relation to some ultimate function of education, such as, "to help students develop into competent citizens who understand the kind of world they live in and their relations to others."¹

Physical education teachers cannot be all things to all people, but Cantor suggests that we can function in limited ways, through specific problems and skills, as these relate to the needs of the students in a particular course in physical education, while keeping in the backs of our minds the goal of general education. This, he implies, requires the highest kind of professional teaching skill.

While the teacher in Western New York was specifically teaching pupils rules and skills, it is also hoped that these skills were specific, or activity objectives of the day's lesson plan, and had some rather important relationships to the ultimate purpose of the school, which was "to develop competent citizens who understand the kind of world they live in and their relations to others."

Fitness as an ultimate objective

Some specific objectives of physical education have been suggested on page 16. We might well think of fitness as being the ultimate or

¹ Nathaniel Cantor, "Function and Focus in the Learning Process," *Journal of Educational Research*, November 1931, p. 228.

the long-range objective. When we say, "I want my pupils to have personal attributes like these," we are speaking of ultimate objectives. Steinhaus would say that this kind of total fitness demands:

- "1. Freedom from disease and handicapping defects.
2. Enough of strength, speed, agility, and endurance to do easily and successfully the routine duties and maximum tasks that the day may bring.
3. Skill and willingness to perform useful tasks.
4. Freedom from worry or undue tension and ability to shift at will between utter relaxation and maximal activity with complete integration of all physical and mental functions.
5. A personal philosophy that in a satisfying way explains or evaluates the world as it is experienced.
6. The assurance of being, with others, part of an important undertaking and at once important to that undertaking."²

Trow suggests some needs that, if satisfied, lead to good adjustment. These, too, in a sense, indicate the total fitness ideal and should have implications for what we do with and to young people in physical education. We might well think that Trow is describing the situation of a happy youth who has spent an afternoon on sunny playing fields under a blue sky with beloved friends as he says:

"If enough good food, rest, sunshine, and so forth, are obtainable so that the physiological organism is strong and healthy, if there is sufficient opportunity for free activity, for striving for ends which he considers desirable, and for the appreciation of things which are to him beautiful, and if in the eyes of his comrades, there is something of respect for him, and if there are those in whom he can confide and those whom he can in some way serve, man may experience that feeling of happiness which has been the goal of life for untold generations."³

Surely, total fitness means more than teaching them the rules and to shoot baskets. It is true that adjustment and development occur in a particular total situation, but we are fortunate that physical education situations, unlike classroom situations in mathematics or history, are unusually rich in conduct situations which involve most of the emotions to which we can apply a name.

² Arthur Steinhaus, Basic Issues Section, *Journal of Health, Physical Education, and Recreation*, September 1956, p. 36.

³ W. C. Trow, *Educational Psychology* (New York: Houghton Mifflin Company, 1931), p. 41.

Job analyses

At one time it was assumed that if we had an analytical knowledge of everything that physical education teachers were required to do on the job and then ranked these duties in order of frequency and importance, we could set up ideal curricula in teacher education institutions in order to prepare them for their future tasks. The fallacy in putting too much faith in such procedures comes with questions such as, "If 75 per cent of the physical education teachers solve a problem in the same way, is it necessarily the most desirable way?", or "If teachers spend 30 per cent of their time conditioning the athletic fields, putting up and taking down equipment in the gymnasium, is this desirable?"

No recent job analyses of physical education teachers are known to the authors, but some older studies no doubt still have considerable validity today. Jackson analyzed the activities engaged in by some 538 men teachers of physical education schools and 467 women teachers in 436 schools. The following adapted table indicates, in rank order, the frequency of tasks in 1940 in Illinois:

Job Analyses *

Men	Women
<i>Administration and supervision</i>	<i>Administration and supervision</i>
Coach of athletic teams	Teacher of physical education
Teacher of physical education	Teacher of academic subjects
Director of athletics	Director of physical education
Teacher of academic subjects	Supervisor of athletic field
Director of physical education	Director of intramurals
Director of intramurals	Supervisor of physical education
Supervisor of physical education	Supervisor of tennis courts
Director of recreation	Director of athletics
Supervisor of:	Coach of athletic teams
Athletic field	Director of recreation
Gymnasium	
Equipment	
Playground	
Tennis courts	
Pool	

* C. O. Jackson, "Activities Engaged in by Teachers of Physical Education in the High Schools of Illinois," Part I, *Research Quarterly*, March 1954.

<i>Activity</i>	<i>Per cent of schools</i>
Cheerleaders	53.5
Pep club	6.3
Academic clubs	6.1
School programs	4.7
Dance group	4.5
Drill club	4.0
Class sponsor	3.8
Sports clubs	3.0
Majorettes and twirlers	2.4
Swim club	1.8
Leaders' club	1.3

It is discouraging to note the relatively little time devoted to leadership and physical education activity in contrast to promotional activity such as cheerleading and pep clubs.

Guidance functions

Guidance has to do with the understanding and development of a human personality and not merely with the supplying of vocational information. Physical education teachers have distinct guidance advantages not enjoyed by most academic teachers. These are:

1. Contact with the same pupils for a consecutive period of years.
2. Operation close to the "biological frontier." They deal with human beings through action and performance, and weaknesses and strengths show up quicker here than elsewhere.
3. Informality of the student-teacher relationship, which is of unusual value for systematic incidental guidance.
4. The playground and gymnasium, which are fine laboratories for studying the individual. Here we get a more adequate view of personality in action than can be obtained in the narrow confines of the average classroom.

The principles of guidance in physical education are equally applicable to all grade levels, but are especially so during the secondary school period. The following concepts concerning the relationship of physical education to guidance were written with

the college level in mind, but are even more effective when applied to the pupils of high school age;⁷

I. The meaning of guidance

- A. Any service which helps students create or change their purposes, helps establish goals and aids them in improving their planning for achieving these goals, is guidance.
 1. It does not mean imposing your point of view or purposes upon the student.
 2. It does not mean making decisions for him.
 3. It does not mean carrying the student's burden for him.

B. Guidance does mean:

1. Helping students to find the goal-resources within themselves, within others (teachers, pupils, businessmen), or within the community that enable them to achieve their goal satisfactions.
 2. Trying to understand another personality in order to assist him to decide where he wants to go, what he wants to do, and how to best find or develop the goal resources that are necessary for goal satisfaction.
 3. Dedication to the principles of self-understanding, self-determination, and self-direction.
- II. The areas of guidance and the relationship of physical education to them
- A. Educational guidance
 1. Makes known the purpose and offerings in the physical education department.
 2. Determines student needs and interests by interviews and tests.
 3. Helps the student to understand the purpose and function of the department in relation to his needs as determined by interviews and tests.
 4. Exposes the student to try-out or exploratory experiences so that he may gain insight into the possibilities of activity areas.
 5. Enlightens the student regarding intramural or club activities and encourages him to participate.

⁷ Charles C. Cowell, "Guidance and the Service Program in College Physical Education," *Fifty-Seventh Annual Proceedings, The College Physical Education Association, 1955*, pp. 23-26.

6. Appraises student progress and encourages a "success attitude" so that he will continue activity-making wise choices on the basis of self-understanding, self-determination, and self-direction.
- B. Health guidance (Mental and physical health are interrelated.)
 1. Assists students in developing a well-balanced program of physical activity and recreation.
 2. Develops in students an understanding of the relation of physical education to health.
 3. Helps students to evaluate their own physical assets and liabilities.
 4. Encourages action on the part of the student that will result in overcoming remediable defects or compensating in a wholesome way for those which cannot be remedied.
 5. Suggests information (books, pamphlets, etc.) which will contribute to desirable health understandings and attitudes.
 6. Cooperates wholeheartedly with the health services available in the school and community in the interest of student health.
- C. Vocational guidance (In the physical education situation this is most informal yet often effective.)
 1. Learns what the student's vocational goal is.
 2. Discusses informally with the student what skills and abilities are required for this particular task.
 3. Encourages the student to evaluate the capabilities and interests with respect to requirements for the occupation mentioned.
 4. Suggests sources of information, other men or women on the faculty or in the community with whom he or she may discuss problems.
 5. Stresses the place of health and physical fitness in relation to success in any occupation or in relation to the particular occupation of a given student.
- D. Guidance for personal-social adjustment (Adjustment is the process by which people meet their needs.)
 1. Encourages the development of a broad range of friendships through activities of the program.
 2. Tries to have each student feel that he is superior in some activity.

3. Encourages an emotional climate that encourages cordiality, informality, sociability, mutual helpfulness, and an attitude of real play.
4. Fosters group activities that improve human relations and enable individuals to assess their social powers as members of groups by membership in informal teams, clubs and similar groups which are not entirely exclusive.
5. Evaluates the physical education program in terms of some of the following basic-personality-need-satisfying criteria which students experience as a result of participation:
 - a. Recognition, approval, appreciation, status.
 - b. New experience, excitement, adventure.
 - c. A sense of power, mastery, achievement, accomplishment.
 - d. Affection, being wanted, a sense of belonging.
 - e. A sense of protection and security, a release from anxiety and tension.
6. Understands and applies the important principles of sociometry and employs scientific devices for studying groups and examining the interrelationships existing between individuals in them in the interest of happier social adjustment, more effective learning, and sounder mental health for all.

Iff. Who needs guidance? Who are the "misfits" in the gymnasium?

1. The wallflowers and the bench warmers, the nonparticipants.
2. The oversized and the overweight, the undersized and the underweight.
3. Those with other physical anomalies which attract attention and bring ridicule or censure on the student.
4. Those lacking individual and social self-confidence.
5. Those showing hostility and exhibiting negative or anti-social traits.
6. Those "showing off" or always seeking the center of the stage.
7. The timid, over-anxious, and fearful.
8. Those working far below their abilities and capacities.
9. Those who seem downright unhappy, moody, or depressed.
10. Those who feel isolated, rejected, and unwanted at home or in school.

11. Those who indulge excessively in fantasy or daydreaming and are overshy, timid, and introspective.
 12. Those who tend to belittle themselves and often stress their shortcomings.
- IV. Record keeping (most efforts at extensive, objective, and continuous record-keeping bog down of their sheer weight).

A. Purposes of a record

1. To enable the student to evaluate his own developmental growth.
2. To enable deans, placement officers, and guidance co-ordinators to benefit by information which the physical department has accumulated regarding a student.
3. To be able to assess rather quickly the strengths and weaknesses and general trends of development of individuals for counseling.
 - a. A fairly simple graphic type of record where students are scored in terms of t-scale scores based on the performance of their peers seems desirable. This would also include a record of the self-expressive tendencies by listing the leadership, participation, and degree of skill in various activities.

A recent study by Jaeger and Slocum of the contribution of physical education teachers to guidance in Minnesota's secondary schools indicates that these opportunities and responsibilities have not changed greatly over the years.⁸ Over 50 per cent of the men and women physical education teachers in Minnesota's secondary schools were advisers to a home room and advisers to an entire school class, that is, to all the freshmen, sophomores, juniors, or seniors. As much as 60 per cent of the men physical education teachers and 49 per cent of the women were serving on special committees, such as scholarships, discipline, and so forth, that have to do with the guidance and welfare of the students in the school.

The problem areas and the problems most frequently encountered in their guidance functions as physical education teachers are indicated by rank order in the tables that follow.

This and similar studies indicate the degree to which students seek solutions to their various personal and social problems by using their physical education teachers as a goal resource.

⁸Eloise M. Jaeger and Helen M. Slocum, "Physical Education Teachers' Contributions to Guidance in Minnesota Secondary Schools," *Research Quarterly*, March 1956, pp. 23-31.

Women physical education teachers (*Continued*)

Problem areas	Rank	Most frequently encountered problems
Social and recreational life	2	a. Lack of recreational skills, dancing, and so forth b. Failing to have fun at school functions c. Not knowing how to act on a date
Health and physical development	3	a. Menstrual disturbance b. Posture faults c. Weight control
School adjustment	4	a. Fear of low grades b. Inability to get lessons done c. Poor school facilities
Home and family life	5	a. Poor child-parent relationship b. Fear of parental criticism c. Unhappy home life
Vocational choice	6	a. Difficulty in making vocational choice b. Wanting to be out of school and on his own
Finances	7	a. Financing post-high school education b. Necessity for working part time

Problems of beginning teachers

What problems do beginning teachers of physical education face? What should your college or university have taught you but, apparently, did not? The following list, compiled by critic teachers of physical education in the Cleveland, Ohio, public schools, might well be used for self-appraisal by you.

1. Problems most common with new student teachers

- a. Inability to meet discipline problems; class control.
- b. Tend to cover too much subject matter.
- c. Too much philosophy—not enough practice.

- d. Lack of experience with extracurricular programs.
 - e. No idea of a grading system.
 - f. Lack of poise.
 - g. Lack of self-confidence.
 - h. Weak in practical skills and testing.
 - i. Inability to plan lesson for continued activity for duration of period; lack of organization techniques.
 - j. Failure to understand some of the problems in other subject fields.
 - k. Actual conditions and problems different from what they expected—they look for ideal teaching conditions.
 - l. Too many specialists—need comprehensive background in many activities in order to teach satisfactorily.
 - m. Failure to see unit of work in its entirety.
 - n. Pupil-teacher relationship, better understanding eliminates many problems, both disciplinary and administrative.
 - o. Proper constructive criticism—right amount of work.
 - p. Lack of firmness and decision.
 - q. Unaware of multiplicity of services expected of and required of teachers.
2. *Most common failures or shortcomings concerning class procedures*
- a. Cannot analyze a sport and break it down into "teachable" skills.
 - b. Failure to use leaders and volunteers in demonstration.
 - c. Faltering explanations.
 - d. Inability to adjust to the unexpected.
 - e. Safety precautions often overlooked.
 - f. Stop to discipline one student and let fifty students stand waiting.
 - g. Try to cover too many difficult activities—results in decrease of learning.
 - h. Participate at cost of supervision.
 - i. Poor voice training—modulation, enunciation.
 - j. Need to give clear, concise, simple directions.
 - k. Learn to select essentials, teach more thoroughly.
 - l. Failure to delegate duties.
 - m. Assume class knows more than it actually does.
 - n. Handling of routine procedures such as windows, window shades, and lighting.
 - o. Recognize abilities and maturity of pupils. Give them benefit of doubt.

3. *Are they adept at demonstrating various activities such as stunts and tumbling, apparatus, game skills?*
 - a. Do not have wide enough range of training.
 - b. Some are sports specialists.
 - c. Tend to demand standard performance from all pupils.
 - d. Lack of technique in teaching various skills.
 - e. Inability to demonstrate tumbling or apparatus work.
 - f. Cannot adapt activities to age and grade of child.
 - g. Too much emphasis on athletic program, not enough on the basic techniques of physical education.
 - h. Must learn to analyze techniques so that pupils can understand and perform them.
 - i. Games of high organization good; games of low organization fair; skills fair.
 - j. Some fail to recognize differences in mental ability.
- . *Curriculum changes recommended to teacher-training institutions to help improve the quality of teaching in physical education*
 - a. Student teachers should report to training assignment at the beginning of semester to observe the total picture from the enrollment of the pupil in the class to the development of the class teaching program.
 - b. More information on organization of class work, especially large classes.
 - c. More constructive criticism from supervisory personnel.
 - d. More emphasis on sports techniques such as dribbling in basketball, batting in baseball.
 - e. More observation in local schools.
 - f. Teach games, stunts, skills, dances, rhythm in course of study to student teacher.
 - g. More experience in student teaching.
 - h. More thorough screening of students planning to pursue careers in physical education.
 - i. More emphasis on individual activities involving body skills.
 - j. More opportunities to speak before large groups.
 - k. More time should be spent on actually organizing material for classroom presentation.
 - l. More floor work.
 - m. Give more opportunities to teach college service classes when they reach junior and senior level.
 - n. Should be qualified to teach freshmen swimming, service classes or at least assist with those groups to gain valuable teaching experience.

5. Other comments

- a. College physical education programs are permitting athletes and the athletic program to become too dominant in their influence upon physical education.
- b. Longer training periods with more than one teacher and in more than one school.
- c. Dual certification for secondary and elementary teaching.
- d. Extend time to practice teaching to two semesters.
- e. Colleges should furnish opportunity to take National Teacher Examination.
- f. More emphasis on training aids, movies, slides, etc.
- g. Too many student teachers are clock watchers. They need to be inbred with the idea that teaching school is more than a job. It is a service field in which one should not plan to punch the clock.
- h. Some approach should be considered so students do not realize they have a practice teacher.
- i. Orientation of the student teacher regarding physical education policies and procedures and building policies and procedures.
- j. Critic teacher should be understanding and help the student teacher more.
- k. Opportunities to observe good teachers frequently before practice teaching period begins.*

Teamwork in faculty relations

Besides being a desirable social and administrative feature of a school, teamwork among the various faculty members is important because of its effect upon pupils. Examples are numerous. Take the behavior of children in families in which the father and the mother have marked differences in standards regarding neatness, etiquette, food likes and dislikes, or courtesy. Father says "Yes" and mother says "No." Another example is the behavior which results when home standards do not reinforce school standards. The result is often a confused child. He is forced to behave one way at home to please the parents and another way to keep his status with his gang.

Now, if a given school has no common educational philosophy, no common overarching purposes, and no common values which are

* Compiled by and used with the permission of Mr. George J. Kozak, Directing Supervisor, Bureau of Physical Welfare, Cleveland Board of Education.

accepted and stressed by all or most of its teachers, how can we expect anything but some degree of conflict, confusion, and lack of personality integration on the part of pupils?

A school is a miniature society, and what one teacher does affects every other faculty member. If the coach encourages two or three basketball games a week and usurps unduly the time and energy of pupils, such procedures will affect his relations with his academic colleagues. If the girls' physical education teacher competes too strenuously with the orchestra and dramatic groups by overemphasizing the girls' athletic association or dance club activities, relationships between teachers will suffer.

If all teachers tend to stress the same values, which are implied in the stated common educational purposes of the school, pupils will sense some consistency of treatment and the absence of conflict in values among their various teachers. As a result, added personal stability and better adjustment should occur as pupils move through the classrooms, laboratories, shops, and athletic fields of the school. Each teacher should examine his own subject area and bring its activities into a more harmonious relationship with what the school as a whole thinks educationally important.

Of all teachers, physical education teachers should know that good teamwork pays good dividends. People are placed on the team where their duties and capacities best fit them. The players give loyalty and support to each other. A school, like a team, is an integrated social group. Each person has unusual and special abilities and all cooperate for a common goal. Briefly, among many others, these principles of good faculty relations seem especially applicable to physical education teachers and coaches:

1. Always see your teaching activities and specialities in relation to the work of colleagues in other areas and to the goals of the school as a whole.
2. In using materials, space, and equipment and in planning scheduled events, adhere to the agreements made in advance in order to avoid conflict and misunderstanding with others.
3. Be thoughtful of the possibility of encouraging students to spend a disproportionate amount of time and energy on the playing fields to the detriment of their balanced education.
4. Back your colleagues and administrators in supporting action

that upholds the discipline and morale of the school as a whole. Do not make the athletes privileged characters or expect special favors from other teachers for eligibility, special practice, and the like.

5. Take your fair share of responsibility for faculty committee membership in such important groups as the curriculum committee, the evaluation committee, the school health committee, and similar committees. Academic teachers often resent seeing the physical education teacher out in the sunshine while they themselves are busy in committees working on curriculum planning and development.

6. Try seriously to understand what the mathematics and the English teacher are doing to educate youth and help them to understand what you are doing and why you are doing it.

7. The administration of a high school involves planning, organizing, directing, coordinating, and evaluating or appraising its program of education. The physical education teachers have an important part in fitting their particular segment into the total program so that an harmonious whole results.

Courtesy West Bend High School, West Bend, Wisconsin



Several classes combine to make a worthwhile experience

Good education of high-school youth is the result of cooperative effort. By its very nature it must draw upon kinds of competencies, of which physical education teachers supply many. The teacher who wants to be a member of a good staff must be a good staff member.

Discussion

1. What does it mean to have an educational philosophy?
2. What is the relation of theory to practice? Can one have sound practices without sound theories?
3. How would you proceed to test the validity or soundness of your philosophy of physical education?
4. What is the difference between ultimate or ideal objectives and specific, immediate, or activity objectives? Illustrate by examples.
5. If job analyses indicate that 90 per cent of the physical education teachers use a given teaching practice, does this mean that the other 10 per cent are wrong? Is the majority always right?
6. How can physical education teachers cooperate best with the guidance specialist in the high school?
7. To what extent are physical education teachers consulted about certain pupils when these pupils are considered case studies by the guidance specialist?
8. To what extent should physical education teachers serve on various standing committees in high schools, such as curriculum, health, assembly, and so forth?
9. Cite some examples where excellent teamwork among faculty members exists in a given high school. Is this teamwork reflected in a more effective school?
10. Of all the problems of beginning teachers indicated by the Cleveland critic teachers, what do you think are the three most important under each category? What can you add to the list?

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FOUNDATIONS OF TEACHING PROCEDURES

Courtesy Norfolk City Schools



Relating curriculum to life has always been considered the major function of education. This relationship, however, has frequently been so remote as to require a tortuous rationalization to establish it. The life relationship in many school subjects and daily learning pursuits has been practically imperceptible to both teachers and students. Those in charge of curriculum have not always been clear as to just what the significance of the content and activities of a school program is to the fundamental needs and concerns of society or to the fundamental intellectual and emotional concerns of the learners.

—HILDA TABA



Curriculum patterns in physical education

A PATTERN is a model, guide, or plan used in creating something. It is also an arrangement of form made by putting the parts or elements of something in some desired position and sequence. In this chapter we shall discuss the physical education teacher as a "pattern-maker" or curriculum builder; that is, one who combines a variety of different activities into a unified and meaningful learning experience. We shall also note how experiences are used as building blocks to construct a curriculum.

The Citizens Advisory Committee to the Superintendent of Schools has invited you to address the Committee on "The What and Why of the High School Physical Education Program." They would like to know specifically what your curriculum is and what arguments you make to support it. Outline your address.

English is usually a required subject for three years for all high school pupils and for college preparatory pupils it is a four-year requirement. Pressure of time and space has caused your high school administrators to want to cut the physical education requirement to two years with but two one-hour periods per week. The matter is coming up before a faculty meeting in the near future. Prepare a brief of your point of view for presentation to the faculty.

elements or factors may be thought of as specifications and their relationships to each other make up the design. Teachers should think of the curriculum as a whole yet see the interrelationships that exist between the elements of which this whole is composed.

Planning for progression in terms of the needs which develop at each age level, selecting the proper activities, organizing teaching experiences so that learning becomes effective, evaluating and appraising the quantity and quality of pupil development and achievement, all of these are important aspects of curriculum planning and development by professional teachers.

Selection and organization of curriculum content

The curriculum is merely the provision by means of which appropriate educational experiences are assured. Educators face a real predicament today in answering the question, "What shall we teach in the high school?"¹

In earlier chapters we have discussed the sources of the facts forming the foundations of curriculum development in physical education as follows:

1. *The nature of the society in which we live.* The nature of our contemporary social problems and the resulting demands these should make on physical education programs.

2. *The nature and needs of the individual.* Consideration of the persistent problems of living and growing up at different age levels in a complex industrial democracy and the needs resulting therefrom.

3. *The nature of the learning process.* How learning takes place and the conditions that make it effective.

The selection of curriculum content in physical education is a crucial problem since the curriculum is the basic instrument for organized education.

We live in a world of rapid change. Our success with things has been amazing. Curriculum changes are numerous. Schools of agri-

¹ See, for example, Association for Supervision and Curriculum Development, *What Shall the High Schools Teach?* (Washington: National Education Association, 1956).

culture are dropping courses like "horse production," physics and chemistry are joining forces, mechanical engineers are turning from the traditional steam engine to atomic energy producers. But what of man and his physique? Man as an organism and his need for food, zestful physical activity, and adventure have not changed over the centuries. We cannot escape from the demands of biology, for the physical persists; and if school and society ignore its demands, individual and social disintegration will be hastened.

Man is part of nature. Thomson stresses the deeply-rooted, old-established, far-reaching vital relations between man and nature which cannot be ignored without loss. He states, "Man was cradled and brought up in touch with nature, and he must ever return to her, like the wandering birds whose life is never full until, moved by an organic homesickness, they come back to nest in the place where they were born. Man needs to sojourn with nature in order to get certain fundamental impressions without which he is impoverished."²

As our civilization becomes more complex, curriculum problems become complex, and the more important become gymnasiums, athletic fields, and swimming pools. The more frequently activities close to nature and the biological frontier (free play, hunting, fishing, games, and so forth) are squeezed out of the life by urbanization, passive recreation like movies and television, and just plain physical inertia, the greater is the need for substitutes for the forests, fields, and streams that kept our ancestors biologically healthy and sane and educated them. Physical education facilities, activities, and trained leadership today serve this function and satisfy the old basic needs growing out of man's nature in a civilization which increasingly tends to deny their satisfaction.

Although objectives serve the purpose of defining the goals of physical education, criteria represent value judgments in the selection of learning experiences (activities) most appropriate for the attainment of these goals. Such things as the contribution of activity to the needs and interests of pupils, carry-over value, functional skills, organic power, and the socialization of individuals, are examples of approved criteria.

² J. Arthur Thomson, *Towards Health* (New York: G. P. Putnam's Sons, 1927), p. 331 (Copyright 1927 by J. Arthur Thomson).



Volleyball out-of-doors in the spring

In order to achieve the objectives suggested earlier, it is obvious that the physical education curriculum should consist of a series of rich and guided experiences with some definite order of priority and directed toward the achievement of the stated objectives.

If we classify activities into areas of content of instruction, we might do so as follows:

1. Games, sports, and athletics: individual activities such as archery, golf, track and field events, and bowling; dual activities such as tennis, badminton, wrestling, and fencing; team games such as football, hockey, and baseball.
2. Rhythmic activities: athletic, clog, square, tap, folk, social, and modern creative dance.

3. *Aquatics*: swimming, life-saving, diving, sailing, boating, canoeing, and similar activities.
4. *Self-testing activities*: tumbling, stunts on the apparatus, pyramid building, achievement tests in track and field events.
5. *Camping and outdoor activities*: boating, cycling, canoeing, hiking cook-outs, camping, skating, skiing, skin and skuba diving, tobogganining, and equestrian activities.
6. *Social-recreational activities*: picnicking, play days, mixers, skating parties, social activities of the girls' athletic association, co-recreation sports activities.
7. *Body-building, corrective and preventive activities* (adapted physical education): Body mechanics instruction, special conditioning or developmental exercises, therapeutic exercises.

Only a few of the possible activities have been indicated under each area of content. Each activity should stimulate the growth and development of the specific psychological and emotional outcomes as well as the organic power and skill outcomes indicated in the analysis of the objectives of physical education.

Seasonal programs and weekly schedules

It is worthwhile to visualize plans for organizing physical education instruction over the total period of secondary education, grades seven to twelve inclusive. It is better to assume the desirable time allotment of an hour for instruction every day for every pupil and encourage an hour of free activity in informal or intramural play in after-school hours than to accept meekly a twice-a-week program for urban children that can hardly satisfy the needs for biologic health, not to mention the other valuable outcomes in skills, socialization, and understanding.

The seasonal programs and weekly schedules that follow are in no way to be considered universally applicable to all schools and all climates. They are presented to focus attention on the total secondary school period in a central midwestern climate. The purpose is to get an over-all view of the total programs for boys and girls so that as we consider the parts, elements, or components, these will be seen and better understood because of their relationship to the total pattern.

AN ILLUSTRATIVE BOYS' PROGRAM

Grade	Early fall (7 weeks)	Late fall (5 weeks)	Winter (12 weeks)	Early spring (5 weeks)	Late spring (7 weeks)
7th	(1) orientation (1) softball (3) touch football (2) soccer (swimming once a week)	(1) general gym * (2) stunts and tumbling (2) square dancing (swimming once a week)	(6) basketball (including lead-up games) (2) wrestling (2) stunts on the apparatus (2) volleyball (including lead-up games)	(2) volleyball (1) social dance (2) track and field	(2) track and field (2) swimming (2) tennis (1) evaluation and concluding activities
8th	(1) orientation (3) touch football (3) soccer	(1) general gym * (2) stunts and tumbling (2) apparatus work		(1) folk and square dance (4) swimming	(2) track and field (2) archery (1) evaluation (field day and concluding activities)
9th	(4) touch football (3) speedball	(1) general gym * (3) stunts and tumbling (1) lead-up games for basketball	(4) basketball (2) wrestling (4) lead-up games for volleyball	(1) track and field (1) achievement tests (1) evaluation (2) relays and races (1) lead-up games for softball	(4) softball (2) tennis (1) evaluation

10th	(4) American ** ball (3) soccer	(1) general gym * (4) apparatus and individual stunts	(3) basketball (3) wrestling (3) volleyball (3) square and social dance	(5) track and field
				(4) softball (2) golf (1) evaluation
11th	(4) touch football (3) soccer	(1) general gym * (2) individual stunts and tumbling	(3) badminton (3) handball (3) wrestling (3) volleyball	(2) archery (2) tennis (2) horseshoe (1) evaluation
12th	(4) basketball *** (3) speedball	(1) general gym * (2) apparatus (2) wrestling	(2) folk dancing (2) handball (2) paddle tennis (2) badminton (2) table tennis (2) individual stunts and tumbling	(2) tennis (2) golf (2) archery (1) evaluation

* For orientation and conditioning for indoor season.

** A game similar to fieldball played at Purdue University.

*** Involves much football forward passing. Described in *Journal of Health, Physical Education and Recreation*, September 1952, p. 52.

AN ILLUSTRATIVE GIRLS' PROGRAM *

Grade	Early fall (7 weeks)	Late fall (5 weeks)	Winter (12 weeks)	Early spring (5 weeks)	Late spring (7 weeks)	
7th	(1) orientation and organization (3) mass games, field ball (including lead-up games) (2) self-testing (field ball) (1) posture test and exercises	(2) general gym, marching, relays and games (2) stunts (1) folk and square dance	(3) folk and square dance (4) 9-court-basketball (also other lead-up games) (1) self-testing (including basketball skills)	(3) volleyball (elementary), also mass ring tennis (1) self-testing (including volleyball skills)	(3) track and field paddle tennis, deck tennis, shuffleboard (3) paddle tennis, deck tennis, shuffleboard (1) evaluation and concluding activities	
8th	(1) orientation and organization (3) speedball (2) self-testing, including speedball (1) posture test and exercises	(2) general gym, body mechanics, and fundamental movement (3) folk and square dance	(2) social dance (4) basketball (including lead-up games) (3) tumbling and stunts	(3) achievement tests (2) mass games	(3) general gym, conditioning exercises, fundamental movement (for softball) (2) softball lead-up	(3) softball (1) self-testing (softball skills) (2) archery, paddle tennis (1) evaluation and concluding activities
9th	(1) orientation and organization (3) soccer (2) self-testing, including soccer (1) posture test and exercises	(2) General gym, body mechanics, and fundamental movement (3) social dance	(4) basketball (including lead-up games) (1) self-testing, including basketball skills (4) tumbling and stunts	(3) volleyball (1) paddle tennis, table tennis, shuffleboard, self-testing softball skills	(3) softball (3) tennis, golf, archery (1) evaluation and concluding activities	

- When possible, the program should be adjusted to include swimming in the program, 7th-12th grades.

Activities calendar for the year

Policies are basic agreements that have crystallized all of the pros and cons of available evidence. Policies, if democratically derived, are the result of the best thinking available in athletic councils, health committees, curriculum committees, or the men and women on the physical education staff. Programs and procedures follow policy making by putting the policies into actual practice.

Careful cooperative planning will prevent much confusion and conflict over use of facilities and improve the total morale of the school. Actually, a printed calendar of activities giving dates for the total school for the entire year is of inestimable value to parents, teachers, and pupils. Here, however, we merely suggest a calendar of some physical education, athletic, and related social activities for a year. This calendar is merely for illustration and for the purpose of indicating the broad range of activities, other than class-period teaching, in which physical education teachers become involved. It also points out the importance of a broad overview and the need of planning.

September

- Plan and schedule health examinations in cooperation with school nurse.
- Classify students for competition as examined.
- Meet all new classes and students for orientation to physical-education class procedures.
- Check lockers and locks.
- Hold girls' athletic association organization meeting.*
- Meet with leaders club to assist orientation.
- Organize pep rally.
- Plan girls' athletic association freshmen party.
- Athletic council meeting.*
- School health council meeting.*
- Intramural council meeting.*
- Publish intramural fall schedules.
- Tri-Hi-Y new members party.

October

- Hi-Y induction service.
- Girls' athletic association-Tri-Hi-Y Halloween party.

* Meet regularly at scheduled times.

- Corecreational swimming party.
- Fall golf tourney.
- Enroll students for Junior Red Cross Life Saving.
- Fall tennis tourney.
- Prepare grades for first six-weeks marking period.
- Girls' athletic association interschool sports day.
- Red Cross First Aid instruction.
- Work with leaders club members on participation in youth talent show.

November

- Football and fall intramurals recognition banquet.
- Youth talent show.
- Evaluation and achievement tests in fall activities.
- Basketball pep rally.
- Publish intramural winter schedules.
- Prepare grades for second six-weeks marking period.

December

- Start indoor decathlon in all classifications.
- Begin winter intramural program.
- Girls' athletic association-Tri-J-I-Y Christmas program.
- Modern dance club.

January

- Parent-Teacher Association meeting. Joint boy-girl demonstrations of physical education program, sponsored by leaders club.
- Girls' Athletic Association dad's night dinner
- Winter intramurals.
- Conclude indoor decathlon in classes.
- Prepare grades for third six-weeks marking period.

February

- Plan orientation for new students.
- Combined athletic council, girls' athletic association and leaders club assembly program.
- Girls' athletic association sock hop after basketball game.
- Corecreational volleyball.
- Corecreational bowling.

March

- Square dance.
- Prepare grades for end of fourth six-weeks marking period.

All-school swim meet.

Conclude winter indoor intramurals.

Junior Red Cross Life Saving Tests.

Basketball and winter intramurals recognition banquet.

Red Cross First Aid Tests.

Publish spring intramural schedules.

April

Corecreational softball.

Begin outdoor decathlon in all classifications.

Easter season cross-country treasure hunt.

Career day.

Prepare grades for end of fifth six-weeks marking period.

May

Conclude outdoor decathlon events in all classes.

All-school field day.

Recognitions assembly for spring activities.

Annual evaluation and appraisal of all students in physical education.

Self-evaluation of group work and reports to Student Council by athletic council and leaders club, respectively.

Girls' athletic association, athletic council, intramural council, and leaders club elections of new officers.

Prepare grades for end of sixth six-weeks marking period.

One of the strongest features of the American secondary school has been the vitality of its student activities programs, in which physical education, athletic, and related activities play an important part.

A calendar purporting to list all the activities of a school in session for thirty-six weeks would cover several additional pages. Only a few of the activities in which physical education teachers are most apt to be involved in the course of the school year have been indicated.

In our efforts to stress academic subject matter, the present trend is to scrutinize these activities carefully to see if they contribute to the intellectual development of students. These activities, if well directed, do contribute to social competence and confidence. Social learnings as well as subject-matter learnings depend on active participation. The school has a clear responsibility to aid students in this aspect of development.

*Courtesy West Bend High School,
West Bend, Wisconsin*



Basketball indoors in the winter

Discussion

1. Someone has said that a curriculum is what boys and girls do in school and not what administrators write down on paper. If we presume that what they do results in learning, how should we judge a curriculum in physical education?
2. Distinguish the following by illustration: curriculum, program of studies, course, unit, lesson plan.
3. Discuss and exemplify each of the seven elements or components of a curriculum design in physical education.
4. Discuss the relation of criteria to objectives.
5. List seven possible criteria which might help you select physical education activities for the 9th grade boys and girls in the local high school.
6. What do we mean by a balanced curriculum in physical education?
7. To what extent are we justified in considering the seven areas of content mentioned necessary to a good physical education program? What do you think the areas of content are in a good English education program?

8. Examine the seasonal programs and weekly schedules on pages 86-89. Granted that areas 5 and 6 will be developed largely in after-school periods, on Saturdays, and through club activities, what criteria, if any, of a balanced program are violated? Discuss.
9. Should individual and dual activities be stressed in the 11th and 12th grades? Why?
10. At what grade level would you begin to encourage some election of activities? Why?
11. Has the calendar of activities suggested why a thorough calendar would be a great help to teachers as well as to pupils?
12. Why are policies, democratically derived, exceedingly important? Should physical education departments have written policies? Should we have clear-cut athletic or school health policies? How should they be derived and why should they be available in printed form?
13. What are the relations of policies to programs or procedures?

Reading references

1. Bucher, Charles A., Editor, *Methods and Materials in Physical Education and Recreation* (St. Louis: The C. V. Mosby Company, 1954).
2. Cassidy, Rosalind, *Curriculum Development in Physical Education* (New York: Harper & Brothers, 1954).
3. Cowell, Charles C., *Scientific Foundations of Physical Education* (New York: Harper & Brothers, 1953), Chapter 8, "Problems of Curriculum and Method."
4. Cowell, Charles C., and Hazelton, Helen W., *Curriculum Designs in Physical Education* (New York: Prentice-Hall, Inc., 1955).
5. Irwin, Leslie, *The Curriculum in Health and Physical Education* (St. Louis: The C. V. Mosby Company, 1951 [second edition]).
6. Derteaufier, Delbert, *Physical Education* (New York: Harper & Brothers, 1956), Chapter 8, "The Curriculum as the Medium."



Organization and management of classes

To gain the understanding and cooperation of pupils in the physical education class and to manage and organize the activities involved in teaching so that these may be most profitable for students and teacher is one of the first objectives of the beginning teacher. Good organization and management means guided and directed instruction and is one of the first things that principals and supervisors look for in good teaching.

Organization is only one aspect of administration. Other aspects are planning, coordinating, directing, and appraising or

Your high school principal is especially sensitive to good organization and management. He is also fond of diagraming the organizational structure of the school on paper. These organizational charts help everyone see how responsibilities are divided and point out the relationships between various people and their respective duties in the interest of achieving the objectives of the school. Your principal has asked you to make an organization chart indicating the duties and relationships of staff and student leadership personnel in the organization and management of one of your larger classes from the time the students enter the locker room until they leave at the end of the class period.

From some source, such as the Journal of Health, Physical Education, and Recreation or elsewhere, find a constitution of a leaders club or one which could be adapted for use in some high school and present it for constructive criticism and discussion.

evaluating. Actually, organization is the process of dividing responsibilities among the personnel concerned and adjusting properly the relationships among these people (teacher, student leaders, and other members of the class) so that the objectives of the curriculum, the course, or the unit may be achieved without unnecessary loss of time and energy.

We have deliberately looked at the school as a functional whole and started with the total curriculum and a possible over-all view of a school year. One understands the parts of anything better if one sees them in relationship to the whole situation. We now proceed to the class and eventually to teaching units within the class. The structure of a course, the daily lesson, or even the class itself becomes important as the structural pattern evolves to perform its adequate educational functions.

Need for organization

A school or even a class is a miniature society, a group of people bound together by some common goals or purposes. An integrated social group is one in which individual differences exist, but in which each individual cooperates by making his particular contribution to the success of the group. The informal baseball game on the corner lot is a good illustration of both functional democracy and an integrated social group. Johnny pitches, for his superior ability in that position is recognized. Tom plays center field, and Lee is at shortstop. Each individual has particular abilities, and each makes his contribution to achieve a common team goal—getting their own boys around the bases and preventing the opposing team from doing so within the framework of the commonly accepted regulations by which baseball is played.

Young people can easily see that certain regulations and routines are essential if the desired goals are to be achieved and if learning is to be effective.

Students will see the need of certain regulations. Administration is democratic when people have some opportunity to formulate the policies or regulations they carry out. When people are participants instead of reactors, a different psychological attitude of acceptance results. The student feels much more concerned about obeying a rule that he and his fellow students have suggested than one im-

posed by the teacher without understanding and acceptance by the group.

With limited time for instruction, certain routines in class management are very important, so that roll-taking, showering, dressing, handling excuses, and similar activities do not consume the major portion of the already too limited time for instruction.

GENERAL ORIENTATION

A general formal assembly program for all new students is desirable for orientation to the physical education and athletic programs. Various aspects of the procedural routines and the nature of the program can be presented by student leaders, and a question-and-answer period will make for increased understanding.

Student handbooks, bulletins on locker-room bulletin boards, and direct emphasis in the physical education classes should be employed. Consistency of the application of all routines by all teachers and student leaders, however, is most important. Policies should be democratically derived but procedures for carrying them out should provide no exceptions if a good learning atmosphere is to prevail.

General orientation plans might include the following:

I. General objectives for students

- A. To complete registration for physical education classes.
- B. To become familiar with the facilities and equipment, and regulations regarding their use.
- C. To become familiar with regulations relating to absences, make-ups, and credits.
- D. To understand regulations relating to uniforms, dressing, bathing, use of lockers, towels and their distribution.
- E. To become familiar with the school program relating to school recreation, intramural and interschool athletics.
- F. To participate in class organization and know the regulations for classes.
- G. To secure needed uniforms and other equipment.

II. Content

- A. Grades.
- B. Achievement standards for all students.
 1. Regulations applying to dressing, bathing, uniforms, and absences.

2. Knowledge of routine class procedure relating to absences, class organization, and regulations relating to instruction.
3. Use of equipment, regulations for checking out and care of equipment.
4. Regulations relating to safety.
5. General nature of the year's program.
6. Attitudes that should prevail during class instruction.

C. Procedure.

1. Discussion of the organization and administration.
 - a. Regulations posted on bulletin boards.
 - b. Regulations to be set up at the beginning of the year relate to: type of uniform, how to secure uniforms, plans for laundering uniforms, locker assignments, use of lockers, dressing and handling street clothes, supplying towels and towel distribution, bathing, care and use of facilities, checking out and use of equipment and supplies, safety regulations, absences and excuses, first aid and accidents, methods of classification, plans for marking, use of student leaders, intramural and interschool athletics, and units of instruction in the year's program.
 - c. Regulations that relate to the winding up of the program at the end of the semester and giving out reports, recording students' achievements, appraisal of physical fitness, cleaning out lockers, returning and checking in equipment and supplies, returning or taking home gymnasium uniforms and personal equipment, returning locker keys, receiving key or towel refunds, and returning or taking home towels.

III. Evaluation

- A. Student achievement measured in terms of meeting the achievement standards that have been listed.
- B. Students marked on reliability based upon the care with which they have observed all regulations.

IV. Materials needed

Absence report blanks and other blanks and records, and facilities, equipment, and supplies indicated in the various regulations.

SCHEDULING OF CLASSES

Although the scheduling of classes is an administrator's task, teachers of physical education should make intelligent suggestions in the best interests of good education. In general, the following procedures are important:

1. Subjects that are required of *all* students (e.g., physical education, English) should be scheduled first in the master schedule.
2. Pupils in the same grade should be scheduled at the same time.
3. All pupils should be scheduled for physical education of some kind. In *some cases*, rest may be prescribed by the school physician as the required physical education.
4. Scheduling for physical education should be done on a one-year-basis wherever possible, in order to permit proper unit development, progression, and varied experience.
5. A swimming pool is a second gymnasium and facilitates the scheduling of classes because it is an additional teaching station.
6. Where only one gymnasium exists for both boys and girls, the girls may be scheduled three days per week and the boys two with the plans reversed every other week or every other semester. Since physical education every day for every student is the ideal scheme, this plan is not desirable. Some schools have evolved a corecreational program for one day a week after boys and girls have each had two days of instruction. Climatic conditions are also important factors in planning.
7. Scheduling is greatly aided when separate indoor and outdoor facilities are available for girls and boys. With such facilities, boys and girls of the same grade level may be scheduled at the same time.
8. The *ne plus ultra* of poor educational administration is the administrative convenience of scheduling physical education for the free periods left over after everything else is scheduled. Classes composed of pupils from all four high school grades are a travesty on good physical education.
9. Only in a very large school are there enough restricted students to compose a restricted section for each class. If individual activities are emphasized for restricted students, and a special ex-

ercise room available, it is possible to find an hour for scheduling these pupils and, in this case, they may come from several classes.

10. New techniques and aids to registration have made preregistration popular. This results in better scheduling by keeping classes more nearly uniform in size.

11. There are arguments in favor of both the single and double period physical education classes. In the junior high school, the daily single period is perhaps more desirable. Senior high school students could, perhaps, profit more from the double periods two or three times a week.

CLASSIFICATION OF PUPILS

Classification of students begins with the health examination. This often includes one of the four following categories: active or nonrestrictive, restricted or modified, remedial, rest.

The first desirable classification, after that based on health, is that pupils of the same grade be grouped together according to sex.

Classification into groups of pupils with similar attributes is desirable, because it makes for more effective teaching, creates stronger motivation for participation and performance, makes subject matter (activities) more adaptable to students' interests, needs, and capabilities, increases the safety factor in competitive sports, and provides a better basis for evaluation of individual and group performance.

By the time children reach seventh grade, many individual differences in capabilities appear. They differ in strength, height, weight, speed, endurance, skill, social adjustment, maturity, and many other ways.

Good continuity and progression in a curriculum is possible only within fairly homogeneous groups. Administratively, scheduling of entire physical education classes by homogeneous groups would be well nigh impossible. Within a given class, however, squads may well be classified according to motor ability or physical fitness test scores. Obviously a person classified on the basis of basketball ability would have to be reclassified on the basis of swimming ability, but this is not impossible when classes are organized in squads.

One need not stress unduly the classification system. It is possible to develop group attitudes that avoid any social stigma to being

attached to a certain squad or group. This is especially true when an experienced and skilled basketball player in the top basketball squad is classified in a much less skilled squad in swimming or tennis. It is always the ideal goal to have every student feel that he is superior in at least one activity. The social and emotional values, as well as the physical and skill values that compose the total welfare of the student, are the factors to be considered in any classification scheme.

Chapters IX and X deal with specific classification schemes and evaluation techniques.

Courtesy Arsenal Technical High School, Indianapolis



From organization comes development

CLASS ATTENDANCE

Good administration in a high school requires that the whereabouts of each student be known each period. Attendance records are important, but as little time as possible should be consumed in checking the attendance roll. Some of the following methods have been employed in this process:

1. The "spot" system requires that every student have a number and that when the roll whistle blows, each student stands on his number (if painted on the floor) or covers the number with his right hand (if painted on the wall). Students do not relish being known only as a number. It is therefore highly desirable that each student's name be stenciled or embroidered in legible letters on his or her costume. This procedure helps students get acquainted, helps the teacher to restore lost property, and aids the teacher in learning the names of the students in the class.
2. If classes are organized in squads with a leader for each squad, the squad leaders are responsible for reporting absences quickly on available squad roll slips. Leaders may also check dress.
3. A tag system requires some supervision in order to prevent dishonest reporting (one student may pull another's tag and report for him). In this system, each student has his name tag on a board as he enters the gymnasium. He picks it from the board and drops it into a box, beside the board. The tags still on the board represent the absentees.
4. Each student is given a number after the class roll has been alphabetized. When the class is called to order, the student calls out his or her assigned number and the teacher indicates an absence for the students whose numbers have not been called.

Regardless of the method employed, teachers should keep a roll book for each class and leave adequate space after each name for important health examination notes (e.g., "needs glasses," "carious teeth," "recent appendectomy"). Anecdotal comments ("unduly shy," "picks on others," "consistently untidy") also help to do a good personality as well as a health guidance job. Before long, the teacher will remember the health and personality needs of each student.

EXCUSES

The problem of excuses can be a thorny one unless the school has established clear-cut policies concerning them.

Ideally, there should be few permanent excuses from physical education if facilities and leadership are available to meet the needs of all students. Frankly, this is not true in the majority of schools.

All temporary excuses should certainly clear through a central person or office, preferably the school nurse, principal, or home-room teacher. Pupils may be in school but temporarily excused from physical education for various reasons. In all cases it is desirable that the physical education teacher get a copy of the excuse slip stating the reason why the student is being excused. This often enables the teacher to give brief but valuable informal guidance when the excuse is presented, and makes possible a cumulative record of excuses and reasons for them. These, too, are valuable for guidance and for objective evidence of health development, weaknesses, and for reports to parents.

In the girls' program, menstrual excuses are frequently an administrative problem. It is necessary and wise for the teacher to discuss with her students the menses in all aspects of hygienic living. Students need to understand that it is generally considered wise to be active during the menstrual period. In all but extreme cases exercise is beneficial; and in extreme cases students should be advised to consult a physician. The teacher may want to indicate in the roll book that the student is engaging in less strenuous activity. The students should dress for gym so that they may assist in many ways. They can participate actively in much of the lesson (i.e., refereeing, keeping score, and so forth) and refrain from participation in only the strenuous work of the day. Students then feel less conspicuous and they come to realize that the menstrual period is not one of invalidism.

Excuse policies should be clear and definite concerning excusing athletes from physical education class during the season of a given sport. On the basis of energy expenditure, physical fitness, social learning, and the need for extra study time, athletes might be excused during the season of their sport. Since activities such as golf, tennis, swimming, and gymnastics form part of a well-balanced pro-

gram, however, it seems desirable that minimum performance standards be established in these and other activities and that the varsity squad athlete be required to indicate passable efficiency in the various activities before he is excused.

It helps administratively if physical education units are made to coincide with the beginning and ending of varsity sports seasons so that students are not entering or leaving in the middle of some unit of instruction. When this happens, squad organization is greatly disrupted.

If it is the policy of the school and the physical education department to arrange the units of instruction to coincide with the beginning and ending of a varsity sport in order to excuse the varsity athlete, it is wise for the instructor for the girls' classes to take this into account in the planning of her units, especially if coeducational classes are taught some of the activities in the same lesson.

If one watches physical education majors, who are varsity team athletes, in most of the activities mentioned above, he will be convinced of the lack of knowledge, skill, and ability to teach in activities other than his specialties. This is one reason why many of our high school physical education programs for boys and men are so poorly balanced.

For the same reasons, it is unwise to excuse students who participate and perform with the marching band or cheer leader corps for they, too, are limiting in total skill performance. Close cooperation between the physical education teacher and band and cheer leading instructors can avoid conflict or requests for physical education excuses.

COSTUMES

The teacher, first of all, should be dressed in a gymnasium costume of good taste. It should be immaculate. Without exception, the teacher should never meet a class to teach an activity in street clothes.

For pupils, a standard, easily washable costume is a morale builder. Purchased in lots, the price of such costumes is lessened and two for each student permits one to be in the laundry while the other is in use. Physical education costumes should be required for they are just as essential as are books for other classes. Good taste

and acceptable appropriate costume need to be considered by women physical education teachers. Conservative colors and proper length shorts are examples of things to consider when selecting the teaching costume and costumes for students.

The one-piece costume for girls is considered by some to be more attractive on the majority of girls; others feel that the more popular shorts and blouse are more economical in situations where students buy their own costumes. Whatever costume is chosen, it should be becoming to the majority and should be of a design that will embarrass no one. For special units special costumes may be used. During a unit of square dancing the full cotton skirt and blouse is more appropriate, and for modern dance the leotard and skirt are more practical.

Some schools furnish costumes and launder them. This is paternalistic and takes from the student the responsibility of keeping neat by his own efforts, with the result that when the paternalistic service ceases, he becomes untidy. Conversely, the pupil may become so accustomed to neat and clean costumes that he will feel uncomfortable if not tidy. Regardless of the system adopted, students should be neatly, cleanly, and appropriately costumed for the activity in which they are engaged, and teachers should make no exceptions. As soon as exceptions are made, class morale and the system break down.

CREDITS

If physical education is required for graduation, then definite credit on the basis of laboratory work should be given. This would be equivalent to one-fourth of a credit for each half year of satisfactory work. In a four-year requirement, a student would earn two credits.

Some schools requiring four years of physical education require eighteen Carnegie units for graduation, two of these being in physical education.

GRADES

Grades should be based on the objectives of the program and these, in turn, indicate what the physical education staff considers educationally important. The final grade should represent a com-

posite of the progress the student has made toward the achievement of the objectives.

Since grades usually reflect only an appraisal of a student's knowledge and skill and physical education teachers are interested in other aspects of development as well, some grading system more consistent with the philosophy expressed in this book must be found.

Stated objectives are of little value if we ignore them when we appraise the progress of our students in terms of their individual abilities and status.

The marking system should be clearly understood by the students, and the results used in giving sound guidance to the student.

If the usual five-letter system of A, B, C, D, F is used, some system for translating numerical values into letter grades must be employed if different values are assigned to the criteria employed. If young teachers find themselves in situations that use the typical graded report card, they must help parents and students realize that the single grade is a composite of several means of evaluation representing the several desirable outcomes sought and have students and parents understand what these are.

What constitutes failure in physical education? What does an "A" or "D" mean to the pupil and his parents? Does the "D" pupil know just what his weaknesses are or how he can improve in order to bring his accomplishments in physical education up to the "A" level?

Miller and his colleagues¹ employed a unique marking scheme in connection with the physical fitness program at Indiana University during World War II. It has features that may be easily adapted for use in high schools since it allows for differentials in difficulty and value by assigning desired weights to the various components that make up the final mark. These components are weighed in terms of multiples of the units, 4, 3, 2, 1, 0 respectively for A, B, C, D, F, enabling the partial marks to be compared with the usual academic areas.

The following table indicates factors to be considered in determining the final grade and the weighting assigned to each factor involved.

¹ Ben Miller, Karl W. Bookwalter, and George E. Schlafer, *Physical Fitness for Boys* (New York: A. S. Barnes and Company, Inc., 1943), p. 346.

Weighted values of various levels of performance

Factors	A	B	C	D	F	given
Attendance	16	12	8	4	0	Once
Hygiene inspection	4	3	2	1	0	3 times
Tests on rules	4	3	2	1	0	3 times
Physical fitness	12	9	6	3	0	Once
Posture	4	3	2	1	0	3 times
Stunts and tumbling	8	6	4	2	0	Once
Teacher's estimates	8	6	4	2	0	3 times
Towel fee, lock, etc.	4	3	2	1	0	Once
Total points possible	100	75	50	25	0	

It will be noted that if the weightings are multiplied by the number of tests or evaluations given, the "Total points possible" at the bottom of the table results.

Teachers' estimates may well involve citizenship behavior, sportsmanship, and the like, with specific criteria set up by teacher, pupil, and school philosophy agreement. Factors may be varied to include any items desired, such as swimming, team game skills, or stunts on the apparatus. The weighting, however, must be changed accordingly to equal always the totals indicated with a given number of evaluations. Specific criteria should be clearly understood by the students.

The table below indicates the system for translating point grades into the usual letter grades.²

System for assigning final marks

From 100 to 83 inclusive total points	A
87 to 63 inclusive total points	B
62 to 38 inclusive total points	C
37 to 13 inclusive total points	D
12 to fewer points inclusive	F

Another possible grading scheme that permits the weighting of different items is as follows:

² *Ibid.*, p. 347.

Factors	Weightings
Performance—demonstrated skill	2
Knowledge of rules, strategy, techniques	1
Attitudes (cooperativeness, sportsmanship, effort, regularity, neatness, leadership)	1
Posture and interest in improving physique or figure	1

Excellent = A = 5, good = B = 4, fair = C = 3, poor = D = 2,
fail = F = 1

A ... 5		<i>Illustration of usage (Student-Joe Doak)</i>		
Factor	Grade			Total
A-	4.7			
B+	4.3			
B	4	1	4.3 (x2)	8.6
B-	3.7	2	2.7	2.7
C+	3.3	3	4.0	4.0
C	3	4	4.0	4.0
C-	2.7			5) 19.3
D+	2.3		Final grade	3.8 or B-
D	2			
D-	1.7			
F+	1.3			
F	1			

If plus and minus grades are not given in the school as final grades, the teacher may use the fractions for special merit or demerit in the direction of one of the four letter grades. The system aids in decisions on borderline cases.

Training student leadership

STUDENT LEADERS' CLUB

The high school provides numerous opportunities for student leadership in physical education. Under professional guidance, the adequacy of the physical education program will depend much upon the wise organization and use of the leaders' club and girls' athletic association, or whatever groups are organized.

Leadership is, no doubt, the most important single factor in the success of any educational program. During the first quarter of the present century, much emphasis was placed upon the selection and training of student leaders in physical education. Many of the first male physical education teachers received their early training in the

Y.M.C.A. as junior and then senior members of the leaders' corps, where they received special instruction and gave valuable voluntary assistance in the gymnasium, the pool, and in various club activities within the Y.M.C.A. and in the community. These young men, who later became physical education directors in public schools, carried the leadership idea into the schools, encouraged leaders' clubs, and had well-developed student leadership in their school physical education programs.

Leadership programs that are built around a club organization seem most successful. The following facts and principles should be kept in mind in connection with student leadership:

1. The club should have clearly defined purposes with a formal organization, officers, and simple but well thought out constitution and by-laws.

2. Meetings should be scheduled regularly, with well-planned agenda and a progressive training program based on seasonal instructional needs and coming events.

3. Selective membership is important for group morale. Leadership must be elected from each instructional class with certain clear-cut criteria in mind. Merit demonstrated in class work is an important basis. A simple rating scale with four or five important criteria and checked by the candidates' classmates is a fairly valid selective device for attributes other than skill.

4. The club may also establish minimum skill performance standards in a variety of activities. Candidates who have passed the practical tests and who appear in the upper quartile of the composite rating score (the result of their classmates' judgments) are then eligible for formal induction into the leaders' club.

5. A dignified induction ceremony in the presence of the club members is important. At this time the club officers explain the purposes of the club and its objectives and what is involved in membership.

6. Continuous membership should be contingent upon maintenance of satisfactory scholarship and performance of assigned responsibilities.

7. Activities of the club might include the following:

- a. Assisting in matters of routine administration of class work, such as helping with setting up and replacement of equip-

ment, supervising towel check, issuing and inventorying equipment, checking achievement test and other testing program scores, preparing charts and keeping them up to date.

- b. Meeting with the staff to plan special events, such as demonstrations for the P.T.A., play days, and similar events, and to assist in their execution.
- e. Acting as squad leaders and caring for various activities during class periods. Giving special help to a small squad or group with new material such as a new dance pattern.
- d. Helping administer the noon-hour recreation program.
- e. Coaching intramural teams.
- f. Acting as student publicity directors for physical education.
- g. Contributing to community services (e.g., playgrounds, girl scouts, boy scouts), and developing a notebook of games for use in the above situations.

8. Recognition of good leadership is important for individual and group morale. All of us like to feel that we have achieved significantly, that we are recognized in this achievement, and that we belong to a select group that has status and appreciates the services we have rendered. The following are some ways in which the physical education leaders may be recognized.

- a. Annual recognition day—a day on which all significant contributions to the life of the school are recognized in an assembly program.
- b. Photographs in the school and town newspapers and in the school yearbook.
- c. Certificates and a special leader's pin.
- d. A certain room designated as the leaders' club room, where plaques and pictures may be placed and meetings held.
- e. Letters of appreciation signed by the teachers of physical education and the school principal sent to those on the leaders' honor roll.
- f. Distinct uniforms and emblems that help solidify the group pride and morale.

9. Some system of rank and progressive promotion, perhaps representing three levels of development and ability, may be employed. At each level, distinct criteria and performance tests would apply.

Some such designations as squad leader, class leader, and assistant teacher are suggested.

The details of planning, organizing, and administering most of the club details may be left to the students under the competent and friendly guidance of the physical education teachers. We frequently refer to the committee system with humor. It is still the one method of getting thinking and participation from a large proportion of the membership. When students make plans, suggest new ideas, and take care of their own arrangements under teacher guidance, they are being educated in democratic procedures.

It is highly desirable that by whatever names the boys and girls leaders' groups are known, they cooperate and have occasional joint planning meetings and social times.

GIRLS' ATHLETIC ASSOCIATION

With the trend away from apparatus stunts and the more formal type of activities and toward games and sports, leadership classes and the employment of student leadership have, unfortunately, been developed to a lesser degree. This loss of student leadership has been a distinct detriment to all programs.

Through the organization of the girls' athletic association, student leadership programs for girls have been faced with fewer difficulties.

It is important that the teacher assume the responsibility of effective guidance so that constructive student leadership results. Each leaders' class or meeting must be carefully planned so that students clearly understand their role in the class situation. Game rules and techniques and methods of presentation, proper use of apparatus and safety techniques, how to spot pupils, how to record performance, how to help the slow pupil, how to develop group enthusiasm, all of these situations and many more must be learned and experienced if leaders are to feel adequate to their responsibility.

Girls' athletic associations in schools do not represent a new idea. Many were to be found in the high schools in the early 1920's. In some high schools girls' recreation associations are being formed and in some instances the girls' athletic association is being renamed, for leaders feel that this is a broader term and therefore describes more accurately the broad program which the organiza-

tion promotes. It matters not by what name or set of letters it is called as long as it fulfills its function of broadening and enriching the experiences of the high school girl.

A teacher going into a new school will soon determine the presence or absence of a girls' organization in the school for the promotion of the athletic and recreation programs. The teacher will, likewise, determine the nature of any existing organization that is available for school membership, such as the Indiana League of High School Girls' Athletic Associations.

Through participation in the activities set up either by a local school or state organization the high school girls can more effectively satisfy their needs. Two or more regular weekly class hours are often not enough for teaching of sports skills as well as permitting adequate game participation. The well-skilled girl needs and usually wants more opportunity to play; the less-skilled needs more time and more experience than class work alone can give. The shy girls and perhaps the tomboy need opportunities for social experience. All high school girls should be given as many opportunities as possible for leadership and cooperative followership resulting from experiences in school and community service.

The program of the association should be broad if it is to fulfill its function. Students need careful guidance, and if the purposes of the club are to be realized a business-like organization should be maintained. Students can learn the art of conducting a business meeting and the process of organizing many smaller activity clubs or committees. If the organization is large it is wise to have student heads of the various sports. A well-rounded program should include a wide range of team and individual sports. Often it is possible to include in this program those activities that are impossible to include in the regular classes. Since this kind of organization is for all the girls in the school, one needs to be careful that it does not attract just the highly skilled. Adaptations of sports can give variety and attract those who might otherwise be afraid to join the highly skilled. Games such as kickball, hit-pitch baseball, and modified volleyball would make for an interesting contest within the group. Activities such as shuffleboard, table tennis, and deck tennis help to stimulate interest for those less skilled in the highly organized team sports, and many who are highly skilled need to learn and to have experience in activities that are excellent recreational games.

Special projects, such as making homemade sports equipment for social and party recreation, entertaining the girls who will be first-year students in the following year and acquainting them with the school and with the recreation and sports program, and sponsoring corecreational afternoons once a month, are both educational and interesting. In addition, there are many other special events that an imaginative group and its leaders can evolve.

The girls' athletic or recreation association should take much of the responsibility for running sports and play days. The various clubs within the larger organization, the modern dance group, the badminton club, the fencers, the square dancers, can arrange an interesting and informative program for parents, school parties, or for parent-teacher meetings. If there is a comparable boys' organization, planning should be done together by the officers of both the boys' and the girls' clubs for a broad and interesting program of corecreational activities.

The physical education teacher needs to realize that if the organization is to function well she will have to spend much time in guidance and in actual instruction, but the rewards to the student and to herself are great and it should be every teacher's aim to provide for all girls in the school a creative and an interesting extra-class learning experience.

A list of suggested activities for girls would include:

Team sports—fieldball, kickball, hockey, soccer, speedball, softball, basketball, volleyball.

Individual sports—archery, bicycling, boating, fly and bait casting, golf, hiking, horseshoes, paddle tennis, roller skating, tennis.

Corecreational team sports—golf, kickball, softball, tennis.

Corecreational individual sports—archery, fly and bait casting, golf, horseshoes, paddle tennis, roller and ice skating, swimming, tennis.

The chief problem today seems to be the inability of the school administrator to find one period a week during the school day when a girls' athletic association governing board or leaders' club might meet. In schools that have activity or club periods once a week, the elected members of these groups might sign up for this activity and meet with the physical education teachers at that time. The drawback is that the orchestra, the school council, and various hobby clubs would also meet during these activity periods. Students, however, must learn to make choices.

Discussion

1. Look up and discuss some definitions of the words "organization" and "management." What definitions seem most appropriate to the contents of this chapter?
2. Inquire into procedures that several different high schools in the vicinity employ to take care of excuses from physical education for temporary indisposition (e.g., headache, stomachache) while the student is in school. Evaluate each against criteria that the class establishes.
3. How may the teacher's roll book in physical education be helpful in individual guidance?
4. Inquire into several methods of checking attendance and handling and checking towel distribution in the schools of nearby towns or cities and evaluate the procedures.
5. Make a set of rules or principles that the beginning teacher might follow in managing the discipline of pupils in the gymnasium.
6. What activities in class management may be justifiably made routine? Why?
7. What is the relation between routine and discipline?
8. What is the importance of teacher-pupil cooperation in setting up routine class procedures?
9. Should the students' neatness and diligence in taking showers be reflected in their physical education grades? How would you grade pupils in physical education?
10. Describe a good class organization of a large physical education class, using squad leaders.
11. What is leadership? What are the most important attributes of a successful leader?
12. Set up a panel in the class to discuss all practical points and procedures involved in a successful student leaders' club in physical education.

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Organization of learning experiences

THE EFFECTS OF physical education activities on learning depend on what these activities are, how they are organized, the personality of the teacher, and the methods of teaching employed.

Chapter III discussed the importance of the teacher paying attention to the student, while the latter pays attention to what he is learning. Motivation was considered important because, despite what the teacher does in the way of controlling the activities and the environment, learning to a large extent depends on the student's own pattern of meaning.

One of the prominent issues in the professional education of teachers today is concerned with the question of "content" versus "method." Teaching is both an art and a science. One cannot teach history, mathematics, or swimming unless he "knows" history, mathematics, or swimming. "Content" and "method" are closely related in the experience of the young teacher. "What a person can do is more important than what a person knows."

Theory, the "know why," and practice, the "know how," become united in professional education by close relationship between the study of basic principles, observation of good teaching methods, participation in teaching situations, and, finally, practice teaching on one's own under competent guidance. This implies that, although content is most important, teaching is something more than merely telling or lecturing. It also involves ways and means of organizing learning experiences.

and values in relation to established goals. Successful method by the teacher implies that students are satisfying needs that are important to them.

We may start by learning the names of pupils, making some friendly contact with each one, finding out something of the ambitions, goals, and purposes of each, and learning something of the social relationships in the group.¹

Meaning and importance of method

In the introduction to Part Three, it was stated that both "know how" and "know why" are important in the techniques of teaching. The organization of learning experiences consistent with modern educational goals in physical education is the prime consideration of the teacher, who is also a curriculum planner and developer. This chapter will serve the student best if Chapters II and III are reviewed quickly.

All learning has some basis in what one has learned previously; therefore, the question of progression is important. We try to build on the foundation of what has been learned in the past. We are also concerned with the purpose and intent that the present learning may have for the pupils, for it is from these that real learning is derived. The methods we employ, in a sense, control what we teach.

In order to avoid repeating in detail what the reader should have learned in educational psychology and to avoid leaving the idea that there is one simple formula for selecting the one best method of teaching, the authors here provide a number of principles. It is hoped that the reader will examine each principle carefully and endeavor to apply it to some specific physical education situation. How one learns is important, for how pupils learn affects *what* and *how much* they learn and *how long* they retain what is learned.

Principles of teaching methods

The good physical education teacher is a director of learning, a development supervisor, a counselor and guidance worker, an applied social scientist, an effective member of the school com-

¹ See page 303 for use of sociometric devices.



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¹ See page 803 for use of sociometric devices.

munity, a liaison between the school and the community, and a member of a socially important profession.

The competent teacher consciously or intuitively applies most of the following principles:

1. All learning is related to something. Objectives, goals, and purposes are basic to learning and should become clear to the learner.
2. Good teaching takes into account the past experiences of the learner; it considers progression important.
3. Pupils learn through self-activity, through doing.
4. The planning of learning activities should be adapted to the principles of growth and development.
5. Satisfactions and other intrinsic rewards rather than punishments should be stressed.
6. Activities that are inherently interesting should be stressed in the program.
7. Motivation is basic to learning in that learning is closely related to what a pupil really values in terms of achievement. Development of goals is one of the important aspects of the direction of learning.
8. Good teaching is both diagnostic and remedial and provides for individual differences.
9. Drill should be used intelligently. Learning takes place best as the whole pupil reacts to a total situation. Learning should be unitary, not fragmentary.
10. Good teaching liberates the learner, develops in him initiative, self-confidence, and self-reliance, and helps him to maintain an effective balance between freedom and security.
11. Good teaching is well planned and the pupils well oriented to receive it. Any kind of learning is most effective when the student is physically, mentally, and emotionally prepared for that particular experience.
12. Good teaching is a cooperative affair between teacher and pupils.
13. The physical and social environment should be such that important learnings in socialization and desirable character attributes result. These are the so-called incidental or concomitant learnings.
14. Good teaching gives opportunity for the expression of demo-

cratic attitudes and skills necessary for effective participation in a democratic society.

15. Good teaching utilizes adequate evaluation procedures, such as standard achievement tests, teacher-made tests, accurate and adequate records, grading, and reporting.

16. The effective teacher uses the available educational resources of the community and secures the cooperation of parents in school activities.

17. The effective teacher takes special care to create transfer conditions under which activities learned in one situation may be recalled and carried over for use in different situations.

Teaching is an art based on several sciences, including biology, psychology, sociology, and anthropology. As a science its aim is to improve learning. As an art and as an exalted form of social service, its aim is to develop our most valuable resources—our youth.

Importance of instructional planning

Planning is one aspect of administration. It is the process of determining the nature of the physical education program and is necessary to make group action intelligent. It involves the determination of the kind of physical education experiences students should have and the ways in which they may gain these experiences.

In planning the offerings in physical education, the teacher must follow some organization scheme. The fact that physical education deals with activities or experiences rather than with subjects makes planning for instruction somewhat more difficult. Reference to seasonal programs and weekly schedules and a calendar of events for the school year have already involved us in planning.²

Courses for the year, the dividing of the course into units, the planning of the various units, and the day-by-day planning of lessons in the development of a given unit, all involve considerable and careful thought.

In curriculum planning and development one must determine the sequence, the scope, and the relation of courses to each other. At this point, however, we will assume that the year's work as a whole has been organized into units such as orientation, swimming, the

² See pages 86 and 90.

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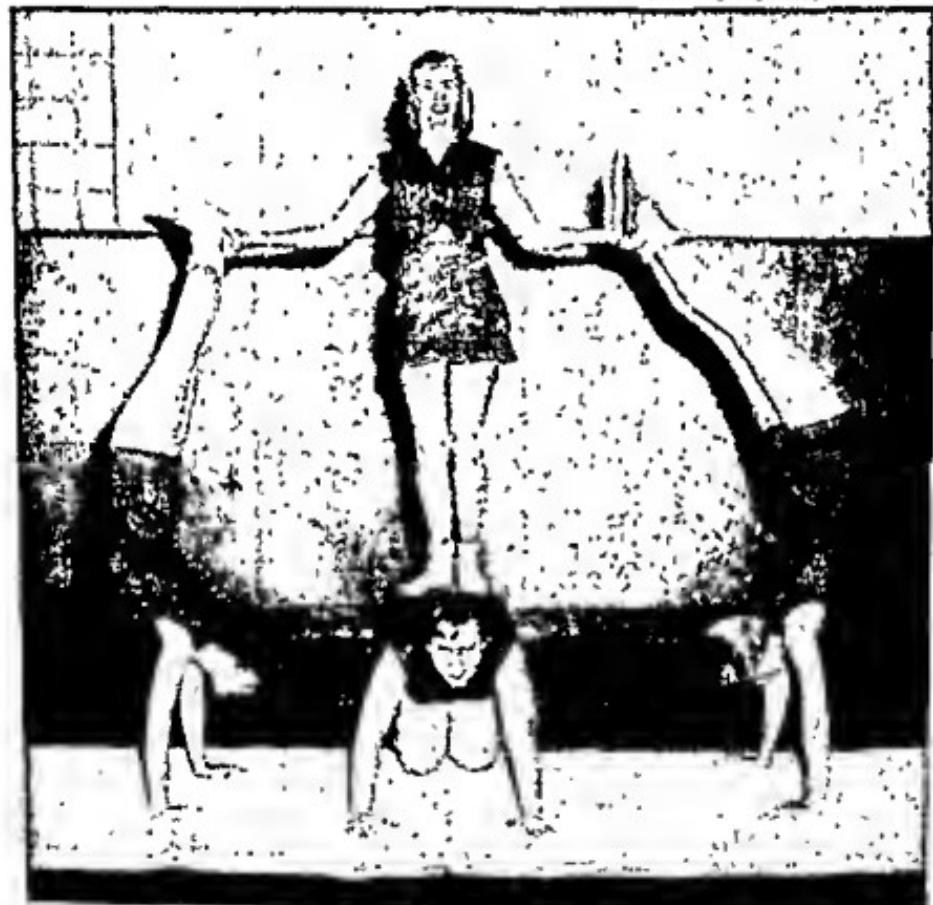
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² See pages 88 and 90.

dance, gymnastics, and the like, and that our next major step is to develop the various parts of these teaching units. The essence of the course is determined by the number, character, and kind of units of which it is composed.

The physical education course is built of logically connected groups of experiences known as units. The character and quality of teaching is largely determined by the planning that is done on the unit level, and we now turn to the planning of teaching units.

Courtesy Riparian, Indianapolis



Building by units

Value of teaching by units

Units are organizing centers for the course in physical education at a given grade level. A unit in field hockey, in badminton, or swimming represents a basic division of the course in physical education. A unit is a systematic program of action for organizing and integrating the learning experiences of pupils around some central theme of interest.

Some of the values inherent in teaching by units are the following:

1. It makes learning more meaningful to the student by getting away from the fragmentary approach of mere daily lessons. The work of one day fits into the previous day and prepares for the next day.
2. There are greater opportunities for integrating other learnings into a unit.
3. It provides greater flexibility to serve individual differences.
4. It develops a stronger feeling of accomplishment on the part of students as each unit is completed.
5. It increases the retention of learning because of its unitary nature. Objectives are made clearer. Students get a total picture and more meaning in the parts related to it.
6. It helps teacher and pupil organize their thinking toward certain specific ends and results in better pupil-teacher cooperation.
7. It permits more satisfactory means for evaluating or appraising the achievement of objectives.

For the teacher, the unit approach presents many potentialities for satisfying the all-important principles of teaching indicated on previous pages.

Unit development

Effective teaching by units requires some preplanning or developing guide lines in the organization of learning activities.

A unit is generally composed of certain basic elements:

1. **Title.** The title identifies the area for study. It should be a functional title, such as "Better Badminton" or "Keeping Organically Fit." An expressive title captures the imagination of students, develops pride and interest in the development of the unit.

2. *Introduction.* The introduction serves to get the unit started, provides a general over-all view of its content, emphasizes its potential values to participants, and indicates the importance of its place in the physical education course. It helps the student see the central problem and focus attention on it.

The introduction should arouse the interest of the student in the unit, present a clear understanding of its purposes, and formulate a definite plan for the execution and, later, the evaluation of the unit.

Possible experiences to initiate a unit might be a panel discussion defining problems and issues raised by students concerning the unit to be studied, a motion picture of activities involved in the unit, a guest speaker well acquainted with the unit activity under consideration, or a demonstration by individual experts or teams.

3. *Establishment of desirable goals and outcomes.* Objectives should be recognized by the students as early in the unit as possible. These should be stated in terms of the pupil, who usually conceives of objectives in anticipation of the experiences he expects to have.

Objectives, naturally, provide an outline of the desired outcomes to be achieved and an effort should be made to define them specifically in terms of pupil behavior. Pupils should have a part in deciding just what the learning outcomes should be. These might be briefly but clearly stated under four major headings:

- a. Knowledge and understandings
- b. Attitudes
- c. Skills
- d. Physical fitness

Sometimes outcomes are also classified as:

- a. Technical learnings (how to stand, how to hold the bat or racquet)
- b. Associated learnings (how to select and care for equipment, the history of the activity, rules)
- c. Concomitant learnings (attitudes toward the sport, toward one's colleagues, appreciations)

4. *Development of the unit.* This involves procedures for achieving goals by the organization of content, methods, and materials related to the unit. Teaching methods, procedures, and techniques,

and specific activities should be listed. Here the teacher must deal with such factors as:

- a. Time
- b. Space
- c. Equipment and supplies
- d. Basis for class grouping (squads, teams)
- e. Number of groups
- f. Student leaders
- g. Sequence in daily lesson plans
- h. The specific day's lesson

Consideration should also be given to the use of teaching aids such as movies, demonstrations, exhibitions, and similar schemes.

5. *Culmination of the unit.* Culmination involves the idea of a summary or a fitting conclusion. It provides a climax to what has been anticipated from the beginning. As the introduction gave a bird's eye view of the unit in prospect, so the culminating activity should give the student a bird's eye view in retrospect.

This activity may take the form of a demonstration on the field or on the assembly stage, an intersquad tournament or meet, an exhibition before another class or the parent-teacher group.

The culminating activity should encourage pupils to draw conclusions, apply the learning to daily living, and to stimulate a feeling of satisfaction and accomplishment because of what was achieved in the unit.²

6. *Evaluation.* This involves "stock-taking" or appraising the outcomes of learning. Evaluation refers to the stated desired outcomes of learning or objectives of the unit.³ Unless objectives really mean something, stating them is merely a waste of time.

Under objectives, we have referred to such outcomes as knowledge and understandings, attitudes, and physical fitness. Evaluation devices may be developed for:

- a. Skill
- b. Various aspects of physical fitness (strength, endurance, improved reaction, and so forth)
- c. Knowledge and understanding of history and etiquette

² See reference to the laws of learning, page 43.

³ See Chapters IX and X.

- d. Tests on application of rules, selection and care of equipment
- e. Application of principles relevant to tactics and strategy
- f. Subjective attitude tests toward
 - (1) game as a whole
 - (2) personal improvement
 - (3) personal relations (new friendships and the like)
- g. The students' own suggestions as to
 - (1) "The things we like most about the unit"
 - (2) "The things we like least about the unit"
 - (3) "How to improve the unit"

A unit outline acts as a guide to the teacher in organizing learning experiences, systematizes instruction, and makes for more effective teaching on the part of the instructor and therefore more effective learning on the part of the student. Obviously, these outlines should be posted so that pupils know where they are going. If one does not know where he is going he cannot find his way and, furthermore, no one else can help him do so.

ILLUSTRATIVE UNITS

Six distinct phases in the development of a unit have been described as the (1) selection of the title, (2) introduction, (3) objectives, (4) teaching procedures, (5) culminating or concluding activities, and (6) evaluation or appraisal of results.

The two unit outlines that follow do not illustrate each of these six phases. Examine them carefully and indicate how they might be revised to include all six.

Basketball unit for high school girls⁵

Purpose: To have the girls acquire some of the fundamental skills and tactics of the game of basketball, a knowledge of rules and of refereeing duties, a spirit of cooperation, good sportsmanship, and a favorable attitude toward health, so that they will enjoy playing basketball and will receive physical, mental, and emotional benefits from the game.

⁵ "A Handbook for Student Teachers and the Supervisory Staff," *University High School Journal*, April 1941, pp. 164-167, copyright 1941 by University High School, Oakland, California.

*Plan**Procedure***A. Techniques**

- | | |
|--|---|
| <ol style="list-style-type: none">1. Passing and catching<ol style="list-style-type: none">a. Chest passb. Overhead pass one and two armsc. Underhand pass one armd. Side arm pass one arme. Hook passf. Overhand shoulder passg. Bounce pass
2. Shooting<ol style="list-style-type: none">a. Chest shotb. Overhead shot | <ol style="list-style-type: none">I. Demonstration of correct technique2. Practice passes<ol style="list-style-type: none">a. In line formation, down the line and backb. In circle formation, short passes for speedc. With partners running down the court and passing and stopping as they receive pass3. Relays, races, and games<ol style="list-style-type: none">a. Line formation, passing for speed against another squadb. Passing between two girls—counting number of passes in a given timec. Circle formation—passing for speed and accuracy and counting number of completed passesd. Relay—doubles, passing the ball down the court and backe. Corner spry game—practices for chest passf. Newcomb game—practice passing for distance4. Tests to measure speed and accuracy of passing<ol style="list-style-type: none">a. Passes against wall for speedb. Throw for accuracy at a target
1. Demonstration of correct technique2. Practice shooting from free |
|--|---|

Plan

- c. Underhand shot
- d. One hand—close to basket

Procedure

- throw line-taking turns in small groups
- 3. Practice taking a bounce and then shooting
- 4. Games and relays
 - a. Game of "Twenty-one"
 - b. Round the world
 - c. Individual basketball
 - d. Relay—two girls running down the court passing the ball back and forth and then shoot for basket

5. Tests

- a. Free throws—number of goals out of ten tries
- b. Shooting from ten different positions in forward court—number of goals scored

6 Pivot

- 1. Demonstration, explanation of use
- 2. Drill—whole class try it together on command
- 3. Practice
 - a. Running and stopping at a whistle
 - b. Running and stopping at a whistle and then pivoting and running in the opposite way
 - c. Line formation—receive the ball on the run, stop, pivot, and pass; use for practice and then as a relay
- 4. Use in game—require use of pivot for brief time in game; also call attention of teams to uses of pivots during game

<i>Plan</i>	<i>Procedure</i>
4. Bounce and juggle	<ol style="list-style-type: none">1. Practice<ol style="list-style-type: none">a. Line formation—bounce, run, catch, and pass, back, repeat using pivot, then use as a relayb. Partners go down court each using bounce to cover ground, and then passc. Bounce around an obstacle2. Use same practice procedures for juggle3. Test bounce and juggle for distance
5. Dodge	<ol style="list-style-type: none">1. Demonstration2. Practice dodging away from opponent with use of bounce or juggle after the dodge
B. Tactics	
1. Defense	<ol style="list-style-type: none">1. Discussion of tactics of defense<ol style="list-style-type: none">a. Overguarding and blockingb. Stay between forward and basketc. Blocking shots or intercepting ballsd. Avoiding the pass across the baskete. Avoiding fouls2. Playing<ol style="list-style-type: none">a. Using defense tactics during playb. Calling fouls strictly3. Practice One shooting, another trying to block shot
2. Offense	<ol style="list-style-type: none">1. Discussion of tactics of offense<ol style="list-style-type: none">a. Getting free from guardb. Following up on shotsc. Moving to receive passes

<i>Plan</i>	<i>Procedure</i>
	<ul style="list-style-type: none"> d. Using pivot, juggle, bounce, and dodge to get away from guard e. Shooting when free from guard
	<ul style="list-style-type: none"> 2. Practice games <ul style="list-style-type: none"> a. Keep away b. Pin ball
	<ul style="list-style-type: none"> 3. Using offense tactics while playing
C. Team play	<ul style="list-style-type: none"> 1. Practicing a planned scheme of passing from guards to forward and from centers to forwards; practicing side passes 2. Team work; plan for getting ball to each other when guarded
D. Rules	<ul style="list-style-type: none"> 1. Explanation during rest time of rules that have been violated 2. Class discussion of rules 3. Sheet of rules posted 4. Knowledge of rules tested
E. Refereeing	<ul style="list-style-type: none"> 1. Girls who are not playing referee 2. These girls are taught to take charge of the game 3. Their knowledge of rules is stressed 4. All violations and fouls are called 5. Refereeing is observed and corrections are made
F. Sportsmanship	<ul style="list-style-type: none"> 1. Girls are encouraged to be sportsmanlike while playing; correction in private of individuals showing poor sportsmanship

*Plan**Procedure*

2. Only captains question a decision of the referee; team is penalized if other players question decisions
3. Hard, clean play is stressed; all fouls are called

G. Health attitude

1. Girls are encouraged to take showers after playing and to launder clothes weekly
2. All girls participate in some part of the program even when excused from regular activity

H. General daily plan

Ten-fifteen minutes daily for practice on techniques, relays or practice games. Remaining time is spent in playing. Suggestions are made during game and when the girls are resting.

Tennis unit for tenth grade boys*

The control objectives, or major outcomes, for teaching tennis for senior high school boys are set forth in terms of condition, skills, knowledges, and attitudes.

Control objectives:**I. Condition**

1. Physiologic capacity to play at least three continuous sets of tennis singles without undue fatigue or lowered level of skill.

The condition involves:

- a. Running, with emphasis on constant and sudden stops, starts and changes of direction.
- b. Strength and flexibility of knees and ankles to protect them from the strains of sudden stops, starts and changes of direction.
- c. Strength and flexibility of wrist, elbow and shoulder to permit continued efficiency in executing the various tennis strokes.

* Karl Bookwalter, "Meeting the Needs for Fitness Through the School Programs of Health, Physical Education, and Recreation," *60th Annual Proceedings, College Physical Education Association, 1957*, pp. 142-143.

- d. Acquired toughness of the skin on the feet and the racket hand, thereby, permitting long and strenuous play without danger of blisters or other skin irritations.

II. Skills

- 1. Skill in serving.
 - a. The flat serve.
 - b. The slice serve.
 - c. The American twist serve.
- 2. Skill in correctly executing the various tennis strokes.
 - a. The forehand drive.
 - b. The backhand drive.
 - c. The forehand volley.
 - d. The backhand volley.
 - e. The forehand half volley.
 - f. The backhand half volley.
 - g. The overhead smash.
 - h. The lob.
 - i. The forehand chop.
 - j. The backhand chop.
- 3. Skill in footwork while playing a tennis match.
- 4. Skill in court strategy while playing a tennis match.

III. Knowledge

- 1. Knowledge of recommended procedures in the selection and care of tennis equipment.
Including:
 - a. Racket.
 - b. Racket strings.
 - c. Tennis balls.
 - d. Shoes.
 - e. Socks.
 - f. Shorts.
 - g. Shirt or blouse.
 - h. Jacket.
 - i. Wristlet.
- 2. Knowledge of the skills involved in correctly executing the various tennis strokes.
- 3. Knowledge of the rules of tennis.
- 4. Knowledge of the terminology used in tennis.
- 5. Knowledge of correct scoring procedure.
- 6. Knowledge of the basic strategy of both singles and doubles play.

7. Knowledge of the procedures in organizing and conducting team matches and tennis tournaments.
8. Knowledge of prominent personnel in the tennis world.
9. Knowledge of the outstanding tennis events of each year (i.e., major national and international tournaments).

IV. Attitudes

1. Readiness to cooperate with the teacher and fellow players.
2. Readiness to play fairly at all times.
3. Readiness to accept willingly the decisions of officials.
4. Readiness to place sportsmanship above winning.
5. Readiness to always play at top effort regardless of the apparent superiority or inferiority of an opponent.
6. Readiness to train and practice regularly and conscientiously.
7. Readiness to always show respect and courtesy toward players and officials when watching a tennis match.

Developing lesson plans

Planning involves anticipating the future. The lawyer plans his case, the architect plans his building, the minister plans his sermon. The planning side of teaching should result in a course, in units, and, finally, in a daily lesson plan.

Although the unit is the basic pattern in planning, excellence of the day-by-day fulfillment of each phase of the unit will depend upon the daily lesson plan. The best approach is to ask yourself, "Just what do I want to accomplish in tomorrow's lesson? What phase of the subunit do I want to complete?"

The teacher of long experience may follow the lesson plan from memory, but practically all teachers need at least a brief written plan as a protection against forgetting, digressing into irrelevant blind alleys, and wasting valuable time.

The following is illustrative of an abbreviated lesson plan in beginning swimming:

COURSE: Physical Education I

1. Major unit: Beginning swimming
2. Subunit: Learning the flutter kick
3. Grade: 9th
4. Date: January 6th
5. Objective: To develop a sense of rhythm in the flutter kick.

6. Procedure:

- a. Instructor comments *on* class management routines.
- b. Instructor quickly demonstrates what will be taught during the lesson.
- c. Review: Bobbing and exhaling under water, opening the eyes under water, tuck floating, prone floating, prone glide, and prone kick glide.
- d. Learning activities.
 - (1) Pupils in water hanging onto the scum gutter with arms straight. Pupils encouraged to move legs in proper form. Face in water. Exhaling slowly under water, turning and raising head to inhale. Teacher encourages rhythm by counting 1, 2, 3, 4, 5, 6, and emphasizing the 1 and 4 counts. Head should be raised for breathing on 5-6 count.
 - (2) Push off side of pool and glide with arms stretched forward.
 - (3) Push off and add flutter kick to glide.
- e. Summary. Class demonstrates full routines of the day.
- f. Next assignment. Teacher demonstrates briefly contents of next lesson.

Use of teaching aids

The effectiveness of any teaching aid is conditioned by its appropriateness to the objectives one has in mind, the length of time required by its use, the efficiency with which it is used, the care with which it is prepared, and the nature of the follow-up.

Included in visual and sound aids to learning are demonstrations, blackboard diagrams, bulletin board materials, models, charts, still and motion pictures, and television.

There is available a constantly increasing amount of commercially prepared visual material for instructional aid in physical education. Unless it is carefully selected for relevance to the unit under way and seen by the teacher before presentation to the class, the very purposes for which it was intended may be defeated.

For skill development, motion pictures are important for motivation and attitude development. What beginning swimmer would not be inspired by hearing the Olympic champion tell how he acquired such skill! What novice would not wish to be able to match the form of Tony Trabert on the tennis court!

Research shows that audio-visual aids are especially helpful early in the learning process. The learner must know what movements are expected of him before he can execute them. He must have a mental image of the movements he is trying to learn. He later translates this mental image into a kinesthetic pattern so that he may produce the movement at will.

Loop films, which continue to repeat the swimming stroke or whatever act is being learned, are especially helpful in fixing in mind the correct movements to be executed. "Look, practice, look, practice," is possible with loop films.

Pupil participation in teaching

Of the many types of clubs in the secondary school, some are service clubs and some are career clubs. The three clubs mentioned rather briefly here may be considered as both service and career clubs.

Democracy requires that youth be trained in leadership qualities of skillful know-how, initiative, social sensitivity to the interests and needs of others, courtesy, modesty, thoughtfulness, and fairness. Indeed, this—and not the mere training of bodies to achieve physical perfection—is the social function, the *important* function, of physical education in a democracy.

Without some well-organized system of student leadership, good and extensive programs of physical education are hardly possible. Students should have a part in the selection of their leaders, and should be encouraged to recognize proficiency and select leaders for qualities of service rather than by superficial criteria.⁷ When leaders have been chosen, however, it is the function of the teacher to train them in their duties, to develop in them a strong sense of service and obligation, and to instruct them carefully in techniques as leaders.

⁷ See page 237 for devices for selecting leaders.

STUDENT LEADERS' CLUB

The possible functions and organization of a student leaders' club have been discussed.*

Careful selection and high qualifications for membership will prevent students from feeling that membership is a special privilege rather than an important service to the school and an obligation to fellow students.

The opportunities for student leadership are numerous. Squad leaders, team captains, referees, scorekeepers, shower leaders, attendance clerks, shower clerks, materials and equipment leaders, swimming suit clerks, all are possibilities.

FUTURE TEACHERS OF AMERICA

Another career club is the Future Teachers of America, sponsored by the National Education Association. It is an organization of young people planning to make teaching a career. Chapters exist in colleges of education and Future Teachers of America Clubs are chartered in high schools. These chartered clubs receive guidance and materials from the National Education Association. Often a local teachers' unit sponsors a club and furnishes guidance and material aid.

Future physical education teachers are eligible and should be encouraged to gain professional laboratory experience by participating in instructional activities under the supervision of the regular teacher. They might very well be used as assistants in the elementary physical education program where the need is so great.

GIRLS' ATHLETIC ASSOCIATION

Promotion of participation in intramural athletics for girls is usually in the hands of the girls' athletic association. This organization, with the fine guidance of the professional teachers nationally and locally, has done much to stimulate participation in physical education activities and in the development of student leadership in girls through its broad program of extra class activities. It has been an excellent means of training leaders for both school and community activities.*

* See page 111.

* See Appendix B for activity program and point system of the Indiana League of High School Girls' Athletic Associations.

Discussion

1. How would you define "educational method?"
2. Discuss the relation of method to educational outcomes.
3. Suppose that you are teaching a sport like field hockey, archery, or baseball. Distinguish between technical learnings, associated learnings, and concomitant learnings in the teaching of one of these sports.
4. How would you teach swimming to a beginner so that he would gain skill and at the same time enjoy the activity?
5. Illustrate how good teaching method is based on scientific data from anatomy, physiology, psychology, and sociology.
6. Take some physical education activity and illustrate how you would apply each of *Strang's six principles* (page 40) in teaching it.
7. What are the advantages of the "whole" versus the "part" method of learning?
8. What values are inherent in the unit method of teaching? How would you define a unit?
9. How do we teach for "understandings?"
10. Take some activity you propose to teach with the unit plan in eight lessons, and outline the unit following the plan on page 121.
11. Take one day of some unit and outline the lesson plan.
12. What specific teaching aids would you use in the unit?
13. Suggest several specific plans for pupil participation in some aspects of the class work.
14. Make organizational suggestions for the ideal leaders' club.

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4. Cowell, Charles C., and Hazelton, Helen W., *Curriculum Design in Physical Education* (New York: Prentice-Hall, Inc., 1953), Chapter 8, "Organizing Learning Experiences."
5. Cruber, Frederick C., and Beatty, Thomas B., *Secondary School Activities* (New York: McCraw-Hill Book Company, Inc., 1954), Chapter 10, "Health, Physical Education and Recreation."
6. Kelley, Earl C. and Rasey, Marie I., *Education and the Nature of Man* (New York: Harper & Brothers, 1952), Chapter 13, "Method."

7. Knapp, Clyde, and Jewett, Ann E., *Physical Education: Student and Beginning Teaching* (New York: McGraw-Hill Book Company, Inc., 1957), Chapter 11, "Planning for First Teaching."
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9. Rodgers, Elizabeth G., *An Experimental Investigation of the Teaching of Team Games* (New York: Teachers College, Columbia University, Bureau of Publications, 1936).
10. Spears, Harold, *Some Principles of Teaching* (New York: Prentice-Hall, Inc., 1949).
11. Williams, Jesse Feiring, *The Principles of Physical Education* (Philadelphia: W. B. Saunders Company, 1954 [sixth edition]). Chapter 10, "Principles of Method."

Audio-visual teaching aids

Rather than give what would be only a superficial list of aids, due to the hundreds that are available, and because space does not permit a detailed list, the references below are sources that provide a number of lists—many with complete notations concerning the particular audio-visual aid.

1. Athletic Institute, *Sports Film Guide*. Gives source, running time, cost for rental or purchase and description of contents for more than 45 different sports and recreation subjects. Price, \$1.00. Chicago: The Athletic Institute, 209 S. State Street.
2. Bernhard, Frederica, and Fish, Marjorie E., *Sports Teaching Aids: Audio-Visual*, 1957 edition. A packet of 3 x 5 cards listing more than 150 sports films, filmstrips, and slides. Each card gives complete source, title, and cost for purchase or rental, age level, skill level, and content. For girls and boys, men or women. Price, \$1.50. Washington: American Association for Health, Physical Education and Recreation, 1201 16th Street, N.W.
3. National Section for Girls' and Women's Sports, *Sports Technique Charts*. Illustrates correct techniques for aquatics, archery, badminton, basketball, bowling, field hockey, golf, riding, soccer, softball, speedball, tennis, and volleyball. Sets, only \$1.50. Washington: American Association for Health, Physical Education and Recreation.
4. Office of Education, United States Department of Health, Education, and Welfare, *A Directory of 3,300 16 mm. Film Libraries*. Price, \$.50. Washington: Superintendent of Documents, United States Government Printing Office.



FOUNDATIONS OF CURRICULUM CONTENT

Courtesy Richmond, Indiana, Public Schools



Current programs of physical education are largely geared to the youngsters who need training least rather than to those who need it most. I can conceive of a new curriculum individually correlated with the results of a series of tests which result from a coordinated research program. Out of an adequate program of training and research should come a progressive physical curriculum, which in the course of two or three years would produce youngsters who were able to use their bodies freely and with confidence. This is a goal worth working for, but it means a revolution in ordinary procedures with respect to physical education.

—LAURENCE S. KUBIE, M.D.



A medium for teaching and learning

As PHYSICAL EDUCATION teachers, we are pragmatists. We teach skills, character, and attitudes through action, through doing. We teach, live, and deal with dynamic situations. We see students as they are and note their assets or liabilities in skills, their physical shortcomings, their ability or inability to adjust to other personalities, their emotional tone and control, their possession or lack of energy output and dynamic drive, their ability to think and act under stress. Observing play and physical education activities, we stand near the biological frontier of

You have taken a position in a community where basketball is king. School administrators and citizens think that basketball is synonymous with a good physical education program. The curriculum consists of basketball and little else. Your principal is also new to the community, but is interested in physical education and is anxious to have you discuss with groups of parents and citizens your ideas of a balanced curriculum in physical education. In this situation there is much that you can say to influence these people.

Many teachers of physical education are placed in high school situations where they have pupils twice each week for about thirty minutes of actual activity for a two-year period. The general criticism is that, as a result of the meager curriculum offerings and limited time, the pupils improve neither in physical condition nor in mastery of skills. The same is often said of the English class outcomes where pupils usually attend class for at least forty minutes for three years.



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development. Practically every aspect of the pupil's personality is open to us for study. Our effectiveness as teachers depends on how we use these valuable data in directing learning.

Teaching is directing the experiences of pupils. Experience is not only the best teacher, it is the only teacher. The end products of learning (objectives) in physical education and some of the basic principles of learning have already been discussed.

Organization of learning experiences (method) is essential to meaning. We know how ineffective would be the teaching of golf in the typically academic fashion of spending days on end with the derivation of the word "golf," the history of golf, the development of the game of golf, the language and technical terms in golf and their meaning, and finally isolated skills in the grip, the stance, the medium pitch, and the fundamental position for the use of each club.

Beck and his colleagues give a good picture of what would likely happen to the unfortunate golf pupil under such an instructional approach:

After a semester of studying about golf and another of formal drill in the gymnasium on the fundamental grips, stances, drives, approaches, and puts the student could probably play the game of golf with the same confidence that he speaks or reads French after a typical two-year, high-school course in the subject. Such an organization might be satisfactory for an article on golf in the encyclopedia but it is not for teaching because the goals are wrong. Such a procedure demands the memorizing of a great deal of material in a one-two-three fashion, out of its functional (operational or instrumental) setting. The emphasis is on teaching rather than learning, and the skills are not practiced in relationship to the game. Learning to play golf by this method would be a boring process to all but the academically minded, those who have good memories or who may be satisfied with "a mere bookish sufficiency." It can be understood why gold stars, grades, and honor rolls would be necessary to motivate such learning. This organization is an ideal refuge for the teacher of golf who is very inexpert at the game. It can be taught out of a book, and one can avoid showing his ineptitude on the links.¹

¹ Robert H. Beck, Cook, Walter W., and Kearney, Nolan C., *Curriculum in the Modern Elementary School* (New York: Prentice-Hall, Inc., 1953), pp. 172-173.

Specific areas of curriculum content

The subject matter of physical education consists of physical activities, which provide the experiences students need to achieve the objectives of the curriculum. The experiences in each activity should contribute to the attainment of the general as well as the specific objectives.

Seven areas of curriculum content have been referred to.² Each area of content has some unique educational purpose and use, that is, team sports encourage socialized behavior and develop organic power; self-testing activities, skill and strength; the dance, creative and aesthetic expression. In fact, each activity in the curriculum makes some contribution to the general objectives of physical education as well as to the specifics inherent in each activity. A balanced curriculum is one that provides stimuli for all categories of curriculum objectives.

In the total physical education course, the student acquires hundreds of knowledges, skills, attitudes, and preferences. It is convenient to classify these into seven areas of curriculum content, each with its somewhat distinct learnings.

For each area of content there exist numerous well-written books by experts. To try to duplicate these efforts here is beyond the province and ability of the authors, but the titles of many of these books appear in the bibliographical lists. Rather, the attempt made here is to indicate some general principles of method under each area of curriculum content, together with a few practical teaching suggestions. Unfortunately, we have not yet developed research in learning to the point where the last word in form or method may be given.

Games and sports

The terms "games" and "sports" are frequently used as synonyms, although some distinctions can be made. A game is a contest, physical or mental, conducted according to set rules or purposes and lasting until a definite limit is reached, as a set time, a certain number of innings or points. Sport is the more general term referring to any particular play, game, or mode of amusement, including games

² See page 81.

as well as fishing, sailing, skating, swimming, hunting, and similar activities.

Games and sports are frequently classified as (1) *individual*, such as hiking, skating, archery, swimming, and similar activities, in which people may participate alone, (2) *dual*, such as tennis, handball, or shuffleboard, in which at least one opponent is required, (3) *group*, such as relays or low organized games engaging a varied number of participants, and (4) *team*, such as football, hockey, or soccer, in which a specific number of people play as a unit or organized team. Naturally, many activities may be conducted so as to fall under more than one of the above classifications. For example, archery and track events may be organized on a group or team basis.

GENERAL TEACHING SUGGESTIONS

1. Endeavor to motivate the student. Create within him a receptive mood of anticipating success and satisfaction, a challenge, and a desire to achieve.
2. Explain the object of the game. Explain how the object is achieved through offensive and defensive play.
3. Explain enough of the simple rules to be able to proceed.
4. Place players in positions and try the game as a whole for a while.
5. Teach skills in relation to a felt need for improving the skill, which the player consciously developed while playing the game as a whole.
6. Stop when necessary to explain a rule or demonstrate a technique. Use good players to demonstrate.
7. Help the learner focus attention clearly on the matter at hand by avoiding numerous details that only serve to confuse him. Stop and teach the fundamental skill most lacking, then proceed with the game.
8. Running comments or suggestions during practice of the total game or activity help the student eliminate errors.
9. Have the student use the skill before you deem it perfected. The student's goal is use and playing the game. He must always see the skill in relation to the total pattern of the game.
10. Match the ~~the~~ ^{the} ^{Walter} situational patterns with which the ~~the~~ ^{the} ^{School (New)}

learner will be faced and in which he will have to perform when he plays the game.

11. Each separate skill does not have to be perfected by the learner before it is used or before others are presented for learning. Continue play and stress each skill as it seems necessary.

12. Audio-visual aids help the learner get an accurate concept of what he is trying to do. Unless their use is repeated and the learner responds in action to what is seen, much of value is lost. Loop films enable one to see and try, see and try. When the teacher is present in the early stages to give additional cues, learning is more certain to start off in the right direction with fewer incorrect responses.

13. Try to get the students to interpret kinesthetically what they see as they watch and what they feel as they try the correct movements. Encourage empathy ("feeling oneself into" the movement contemplated). The learner at this stage must participate imaginatively; he must project himself into the movement.

14. Learning takes place between trials. The student should think through the correct movements in preparation for the next trial. Mental practice between trials is important. Thinking about pivoting, shooting, driving, and blocking, between actual practice periods does increase one's ability to grasp the concept of form, understand the pattern of movement, and help make the pattern function through the motor act.

Assuming (unfortunately, something we cannot always do with confidence) that students have developed the fundamental skills of catching, running, throwing, kicking, and batting in the elementary school, they should be ready for instruction at a higher level in the high school. If a good program of instruction in lead-up games is evident in the intermediate grades, the fundamental coordination, timing, and skills should carry over to enhance ability to participate successfully and with enjoyment in the physical education activities of the high school.

Before a particular sport or game unit is initiated, it might be well to observe students in lead-up games as a means of picking out those who lack the fundamental skills related to a particular game.

Some of the lead-up games used in the intermediate grades, which might also be used as preliminaries to the more highly organized games and sports in the high school, are the following:

<i>Baseball</i>	<i>Basketball</i>
Long ball	Twenty one
Baseball toss-up	Freeze Out
Fly out	Basketball golf
Wall baseball	Twenty five
Stick ball	Circle pass ball
Bunt ball	King ball
Pepper	Captain ball (several kinds)
One old cat	End ball
German bat ball	Net ball
<i>Soccer</i>	<i>Volleyball</i>
Soccer tag	Serve and sit
Throw-in soccer	Keep it up
Soccer kick-over	Newcomb
Soccer end ball	Net ball
Corner kick ball	Bat ball

TEACHING INDIVIDUAL SPORTS

Skill is the conscious acquaintance with and mastery of all parts of the body that may properly come under voluntary control. In brief summary, the teaching of form and the learning of skill involve the following:

1. Knowing what to practice. What are the right movements? What is good form?
2. Knowing where to locate the faults. Right habits must be instilled.
 - a. First think correctly.
 - b. Then do correctly.
3. Knowing how to prevent error.
 - a. Teach right methods.
 - b. Teach right habits of doing the right methods.
4. Drilling with attention and frequent reintegration (review) into the total response pattern in which the particular skill is to be used until the desired result is obtained.
 - a. Check right motions both in number and in sequence.
 - b. Increase speed only as correct form warrants.
 - c. Look for and check on constantly improving quality of performance.

Bad habits result from undirected learning. The instructor of physical education is supposedly a professional in teaching skills.

If one is unimpressed with the dozens of detailed adjustments that must be integrated into such skilled acts as playing the piano, typing, or becoming a skilled archer, let him examine Russell's cues to those who would become proficient in archery.³

1. Keep your feet still after they are once placed in the correct position.
2. Keep your weight evenly divided between both feet.
3. Keep firmly balanced.
4. Relax the knees slightly.
5. Keep the hips straight. Do not twist one or the other.
6. The fingers of the drawing hand should be straight except for the tip end.
7. The bow hand should be relaxed. Never grip the bow.
8. If you are right-handed, shut the left eye when aiming.
9. Let the bow sink back into the hand, never push on the bow.
10. Keep the drawing hand moving backward on the release.
11. Make the release smooth and easy. Do not yank off the string.
12. Keep the shoulders straight.
13. Continue to look at your point-of-aim on your release and follow through.
14. Keep your eyes, when you release, the same as they were before the release.
15. Maintain a firm, but not too tight, an anchor.
16. Keep the elbow of the drawing arm up shoulder high.
17. Keep the left shoulder down. Do not hunch.
18. The bow arm, hand, wrist, and shoulder should be relaxed.
19. Keep the drawing hand in close to your neck when you release.
20. Check to see if your body is in exactly the same position after the release as it was before the release.
21. Keep the weight of your head off the hand when anchoring. Come up and touch the hand to the under part of the jaw bone. Do not lower the head onto the hand.
22. The fingers of the drawing hand should just touch the arrow. Do not pinch.
23. Keep the arrow back at full draw. Do not let it creep forward.
24. Hold the string close to your chin until the exact time of release.
25. Check to see that your bow is straight up and down.

³ Edith C. Russell, "50 Helpful Hints to All Archers," *Journal of Health and Physical Education*, June 1950, p. 339.

26. Avoid swinging your bow arm to the left or right on the release.
27. Keep the weight of your bow off the thumb joint.
28. Check to see that your bow hand does not turn to the left. If you turn the wrist of the bow hand too far inside the bow, it will cause a slapping of the wrist or arm guard, and this usually causes the arrow to fly left.
29. Maintain a steady bead position when you release.
30. Avoid dropping your drawing hand toward the chest on your release.
31. Shoot a bow that feels just right for you. Never use one that is too heavy.
32. Use an arrow that is long enough for you, not an arrow that is too short.
33. Be sure you do not overdraw.
34. Always wear an arm guard.
35. Always wear a finger tab or a shooting glove.
36. Never use a bow or shoot an arrow that has the slightest crack in it.
37. Keep from throwing the fingers of the drawing hand open and going out and around the string when you release. You should feel the string roll off your fingers.
38. You should not throw the fingers of the bow hand open on the release.
39. Be relaxed at all times.
40. Avoid tipping your bow hand up or down or to the right or left.
41. If you flinch, stop. Put your arrow back in the quiver and use another arrow. Although you may not realize it you shoot in a certain rhythm, and when you flinch that rhythm is broken. In order to get back into your rhythm you must start all over with another arrow.
42. Keep from moving the drawing hand forward at any time. That hand should never go forward. From the time you put your fingers on the string, the hand and arm move backward.
43. Maintain an erect head position. Not tipping in any direction.
44. Check the condition of your tackle at regular intervals.
45. Wax your string often. This preserves the string and it will last longer.
46. Check all arrows and bow often to see if there are any cracks in them.
47. Hang your bow up whenever it is not in use.
48. An arrow rack or tackle bow should be used to store arrows when not in use.

49. Buy a water proof bow case for your bow to use when you go to tournaments. Proper protection for your bow will make it last longer.
50. Learn all the safety rules and abide by them at all times to prevent accidents.

It is obvious that teaching archery involves more than telling the student to nock the arrow, bend the bow, aim at the target, and release the arrow. By trial and error, and if one's patience holds out, he may learn to hit the target. Good teaching motivates, short-circuits the learning process, and makes for greater efficiency and more rapid skill development.

TEACHING TEAM SPORTS

Those coaching athletic teams know that information and techniques are available in plentiful amounts in books and films developed by experts. Wolf, however, points out the tremendous importance of organizational factors in successful coaching and suggests that a general seasonal plan for the coming baseball or football season should be written long before it actually begins. Furthermore, a daily lesson plan is exceedingly important because of the limited time available to learn so much. In baseball, there is the problem of teaching fundamentals, offensive tactics, and defensive maneuvers, sliding, hitting, bunting, signal systems, and all the skills and techniques necessary to play each position well. To illustrate, Wolf gives two examples out of the nine baseball positions:⁴

Pitching

1. Wind up position
2. Set position
3. Balks
4. Pitches: stride-release-follow through
 - (a) Fast ball
 - (b) Curve ball
 - (c) Change of pace
 - (d) Other types—individual preference
5. Holding runners close to base
 - (a) Runner on first
 - (b) Runner on second—various defenses
 - (c) Runner on third

⁴ Hal Wolf, "Baseball Planning and Organization," *Journal of Health, Physical Education, and Recreation*, April 1956, p. 42.

6. Fielding

- (a) Bunts
- (b) Batted balls
- (c) Covering first on balls hit to left of pitcher
- (d) Covering second
- (e) Covering third
- (f) Covering home
- (g) Backing up bases
- (h) Runners caught between bases

7. Pitching strategy

8. Pitchouts

9. Signals

Catching

1. Positions

- (a) Giving signals
- (b) After giving signals
- (c) Lateral movements
- (d) Throwing

2. Defensive plays

- (a) Foul tip—men on bases
- (b) Dropped 3rd strike less than 2 outs
- (c) Batted ball—no one on base
- (d) Batted ball—runner on first
- (e) Taking throws

3. Defensive plays—continued

(a) Making throws

Runner on first

Runners on first and second

Runners on first and third (3 defenses)

Force-out at home

- (b) Shifting position for pitches and throws
- (c) Catching fly balls
- (d) Fielding bunts
- (e) Runners caught between bases
- (f) Pitch-outs
- (g) Strategy
- (h) Signals

It has often been stated that some of the best planning and teaching is done on the football field. Physical condition is very important; there is a definite limit to time available to field a team; and intense effort is required to learn so much in a relatively short period.

In many states, spring football practice is prohibited and seasonal practice is permitted to start but two weeks before the fall term begins. Let us assume that all boys have received their health examinations, have parental permission to play, have been issued equipment and lockers. Furthermore, they have earlier been encouraged to engage in prepractice training (by a mimeographed schedule sent to them by the coach) during the latter part of the summer, and are ready for the preschool practice schedule of two weeks.

To illustrate the planning and organization of learning experiences necessary to prepare a team for its first game, the following time and activity schedule is reproduced here for the first two days. Similar plans for the entire preschool program appear in Appendix C.

Preschool practice schedule

Monday

A.M.	P.M.
8:30 Meeting (Training rules, plays, general information)	3:00 Meeting
8:45 Calisthenics	3:15 Calisthenics
9:00 Stance and proper spacing	3:30 Stance and proper spacing. Explain how holes are numbered.
9:20 Shoulder block. All players on dummies	3:50 Shoulder blocking. All players on dummies
9:45 Wind sprints—50 yards	4:15 Wind sprints—30-50 yds
10:00 Practice dismissed	4:30 Practice dismissed

Tuesday

A.M.	P.M.
8:30 Meeting	3:00 Meeting
8:45 Calisthenics	3:15 Calisthenics
9:00 Stance and Starts	3:30 Line work on stance and shoulder blocking. Backs work on handing off and receiving ball
9:35 Tackle dummies	
9:50 Wind sprints—by positions	4:00 Run play units
10:00 Practice dismissed	4:30 Practice dismissed

A football team represents an integrated social group in which each individual is a specialist and makes a distinct contribution to the success of the group. The instructor must think of the specific

duties and skills needed by each player and then devise instructional plans to develop the needed knowledge and skills. For example, let us think of the center. In the left column are some of his essential functions and in the right column are possible techniques for training in the performance of these functions.

Essential functions

1. To snap the ball correctly.
2. To block on the line.
3. To go through for downfield blocking.
4. To charge with speed and awareness.
5. To acquire proper stance.
6. To maneuver defensively.
7. To provide pass and kick protection.

Training techniques

- 1a. Individual attention of coach.
- 1b. Center at a given target.
- 2a. Use charging machine.
- 2b. Live blocking.
3. Going through and blocking the dummy.
4. Use charging machine.
- 5-6. Individual attention to help him get a comfortable stance which will enable him to snap ball accurately and go to his assignment most effectively.
7. Actual practice in passing and kicking drills.⁵

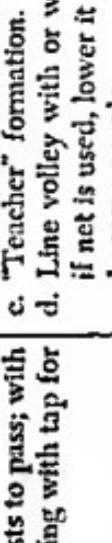
Similar plans may be made for the ends, who must develop speed, be able to get free to catch passes, to block and tackle, and to get under punts quickly. These skills call for running sprints, faking, changing pace, and cutting nimbly.

Guards must be able to pull out of the line and do downfield blocking, to block in the line, to charge with speed and awareness, to protect the passers and kicker, to stop quick openers, to diagnose and call passes, to maneuver defensively, and to assume a stance that will enable them to move readily in any direction. These skills demand training in pulling out and running with a back, use of the charging machine, live blocking in line situations, using dummy practice for footwork, charging on all fours for ten yards, and practicing with the team on calling passes and dropping back if so assigned.

All of these functions call for specific training and learning techniques.

⁵ Suggested by Kenneth H. McCaffry in an unpublished individual study project, Department of Physical Education for Men, Purdue University, 1955. For complete schedule see Appendix C.

Girls volleyball teaching outline^a

Skill	Coaching hints	Organization
A. ball handling with double tap	1. Fingers apart and relaxed; avoid use of heel of hand of fist. 2. Use "spring" with fingers and wrists to pass; with younger players, encourage jumping with tap for greater strength. 3. Always use two hands. 4. Handle ball above waist with fingers up; below waist—fingers down. 5. Avoid letting ball rest on hands ("holding"); tap it cleanly; avoid throwing it. 6. Jump to meet high balls or send ball over net.	a. "Keepup" in circle. b. Zig-zag opposite lines. c. "Teacher" formation. d. Line volley with or without net. 1. same couple, 2. rotating. e. Circle-pass to neighbor.
B. back-lift and set-up for back-lift	1. Stand with back to net, 2-3 feet away from it. 2. When ball comes, lift and sling it over net; palms toward net, hands finishing high. 3. Jump (as in cheerleading) 4. Keep set-up high and slightly in front of net player.	
C. receiving ball to set it up	1. Jump to meet high ball. 2. Bend knees to receive low ball.	a. As above, but No. 1 tosses to No. 2, who receives and sets up.

Girls volleyball teaching outline (Continued)

Skill	Coaching hints	Organization	
3. Use a double tap.	<p>1. Pass the ball up to the front line for a back lift instead of trying to lift over from the back rows.</p> <p>2. Stress that volleyball is a <i>team game!</i></p>	<p>b. No. 5 tosses to No. 2 who receives and sets to No. 1; No. 1 faces net until ball passes, then turns for lift.</p> <p>c. One team throws ball; opponents try only to return.</p> <p>a. Use small court, any number on team.</p> <p>b. Start ball with toss or tap.</p> <p>c. Use unlimited or generous allowance of taps per person or volleys per side.</p> <p>d. Shift rows instead of regular rotation.</p> <p>e. Base competition on how few times ball drops to floor on your side.</p>	
D. <i>adapted beginning game</i>			<p>a. Circle, zig-zag line, teacher or teacher and file.</p> <p>b. At first, have ball tossed low for single or double-tap return.</p>
	<p>A. <i>low ball handling</i> (special emphasis)</p>	<p>1. Fingers down.</p> <p>2. Bend knees! Get under the ball!</p> <p>3. Sometimes need to step back a bit to avoid using heel of hand!</p> <p>4. "Flip" ball up with fingers and wrists to avoid holding.</p> <p>5. Practice both single tap and set-up to self.</p>	

2. Be ready to move under it.
3. Jump to meet high balls.
4. Use double tap.

C. net recovery

1. Same points as for low-ball handling.
2. Turn slightly sideward to net.
3. Practice both lift back to teammate and up to self.

D. "tip-over"

1. Net player has side to net-left side if right-handed.
2. Set-up should be in front of net player and at least net high.
3. Use open hand, not fist, to tip ball over.
4. Jump to send ball across!
5. If set-up is low or poor, use 2-hand lift.

E. team play

1. Point out increased effectiveness and fun of making it a team game!
2. Stress importance of accurate set-ups.
3. Pass ball to front line to send over.
4. Keep alert; be ready to move under ball or back up team-mate handling the ball.
5. Think "offensively"; try to score with placements to edge and back of court and change of direction.

- a. One girl (or a line) at side, to toss ball.
 b. Net held taut.
 c. Ball tossed quite hard into net, above center and at slight angle.
- a. Same as for "back-lift,"
- a. Have girl who uses fist or one hand sit out temporarily.
 b. Play game in which ball must be set up to row in front, except at net.
- c. "Teacher" formation in which players must handle ball in turn but it is not put directly to them.
 d. In practice game, play with reduced number of players to make them cover larger area and move better.

Girls volleyball teaching outline (Continued)

Skill	Coaching hints	Organization
A. "tip-over" with inside hand	<p>1. Net player has opposite side to net (i.e., right side if right-handed).</p> <p>B. receive, turn, pass in same direction</p> <p>C. spiking</p> <p>1. individual</p> <p>a. toss ball for self</p>	<p>e. Practice direction change and placement to edges.</p> <p>f. In game, score 2 points for placement.</p> <p>a. Same as for regular "tip-over."</p> <p>b. Well-spaced line.</p> <p>1. Set ball up very high with first tap. 2. Turn immediately for second tap.</p> <p>1. If right-handed, stand with left side to net. 2. Toss ball for self—high, 2-3 feet above the net, and very close to the net. 3. Keep toss in front of self. 4. Jump to contact ball above net height; demonstrate importance of proper timing. 5. Use open hand, finger tips; do not push the ball. 6. Hit ball downward as sharply as possible.</p>
b. toss, then tap for self		<p>a. Lower net slightly so all may practise spike and most achieve some success.</p> <p>b. Squad in single file, half on each side of net.</p> <p>1. For set-up tap, get well under the ball to get it high.</p>
c. receive from side, set up for self		<p>a. As above.</p> <p>a. Fewer lines; player on right of spiker, as:</p>
		⑤---X

<p>d. receive from back, set up for self</p>	<p>1. As above. 2. Spiker starts with back to net.</p>	<p>2. couple a. partner toss for spike b. partner toss for spike self, set for spike</p>	<p>1. As for individual spike, with continued stress on importance of the set-up in successful spiking. 1. Get under the ball in order to set it high.</p>	<p>a. Squad in single file on each side of net.</p>	<p>a. Partner on right, unless girl is left-handed; may use single girl or line.</p>
<p>d. back row receive, set to front, etc.</p>		<p>c. partner receive from back, set for spike</p>	<p>1. Set-up from back row should be accurate and easy to handle.</p>	<p>a. As above.</p>	<p>a. As above, except ball starts with toss or tap from girl next in line behind spiker.</p>
<p>D. spiking in a game situation</p>		<p>d. back row receive, set to front, etc.</p>	<p>1. As above.</p>	<p>1. Know who and where the best spikers are. 2. Have players call: "Up to Sue—" or "Up to Joani", etc. 3. Vary direct set-ups and those for couple spiking.</p>	<p>a. Same formation but ball is thrown from across net, received in back line, etc.</p>
<p>E. defense against spike</p>	<p>1. recovery</p>	<p>2. block</p>	<p>1. Anticipate the spike; move to expected spot. 2. Start early to get down to receive it!</p>	<p>1. Use two hands. 2. Jump to meet the ball! 3. Good timing is vital.</p>	<p>a. One team serve only; other team receive, set for spike. b. In practice game, award 2 pts. for a good spike or even 1 pt. for any attempt.</p>
					<p>a. One side spiking, other side receiving—either in files or teams. a. One side spiking, other side blocking.</p>

Girls volleyball teaching outline (Continued)

Skill	Coaching hints	Organization
A. "tip-over" with inside hand	<p>1. Net player has opposite side to net (i.e., right side if right-handed).</p> <p>2. Set ball up very high with first tap.</p> <p>3. Turn immediately for second tap.</p>	<p>a. Same as for regular "tip-over."</p> <p>b. Well-spaced line.</p>
B. receive, turn, pass in same direction	<p>1. If right-handed, stand with left side to net.</p> <p>2. Toss ball for self—high, 2-3 feet above the net, and very close to the net.</p> <p>3. Keep toss in front of self.</p> <p>4. Jump to contact ball above net height; demonstrate importance of proper timing.</p> <p>5. Use open hand, finger tips; do not push the ball.</p> <p>6. Hit ball downward as sharply as possible.</p>	<p>a. Lower net slightly so all may practice spikes and most achieve some success.</p> <p>b. Squad in single file, half on each side of net.</p>
C. spiking 1. individual a. toss ball for self	<p>1. For set-up tap, get well under the ball to get it high.</p> <p>2. As above.</p>	<p>a. Fewer lines; player on right of spiker, as:</p>
b. toss, then tap for self	<p>1. Partner's set-up must be easy to handle.</p>	
c. receive from side, set up for self		(S) 

<p>d. receive from back, set up for self</p> <p><u>2. couple</u></p> <p>a. partner toss for spike</p> <p>b. partner toss for self, set for spike</p> <p>c. partner receive from back, set for spike</p> <p>d. back row receive, set to front, etc.</p>	<p>1. As above.</p> <p>2. Spiker starts with back to net.</p> <p>1. As for individual spike, with continued stress on importance of the set-up in successful spiking.</p> <p>1. Get under the ball in order to set it high.</p> <p>1. Set-up from back row should be accurate and easy to handle.</p> <p>1. As above.</p>	<p>a. Squad in single file on each side of net.</p> <p>a. Partner on right, unless girl is left-handed; may use single girl or line.</p> <p>a. As above.</p> <p>a. As above, except ball starts with toss or tap from girl next in line behind spiker.</p> <p>a. Same formation but ball is thrown from across net, received in back line, etc.</p>	<p>a. As above, except ball starts with toss or tap from girl next in line behind spiker.</p> <p>a. One team serve only; other team receive, set for spike.</p> <p>b. In practice game, award 2 pts. for a good spike or even 1 pt. for any attempt.</p> <p>1. Know who and where the best spikers are.</p> <p>2. Have players call: "Up to Sue—" or "Up to Joan!", etc.</p> <p>3. Vary direct set-ups and those for couple spiking.</p>	<p>a. One side spiking, other side receiving—either in files or teams.</p> <p>a. One side spiking, other side blocking.</p> <p>1. Anticipate the spike; move to expected spot.</p> <p>2. Start early to get down to receive it!</p> <p>1. Use two hands.</p> <p>2. Jump to meet the ball!</p> <p>3. Good timing is vital.</p>
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Girls volleyball teaching outline (Continued)

F. Advanced team play

1. Ball hit around spiking.
2. Utilize to the utmost change of direction, and placement to edges of court.
3. Think "effectively"; try to score with each play unless desperate to return.
4. Be constantly on alert to move for the ball or back up another player.
5. Utilize server placement to weak spots; develop a variety of serves.

Miscellaneous

1. Additional warm-ups

- a. wall rally
- b. rotating "teacher" formation
- c. single-top ball-handling

2. Modifications for large numbers:

Extra players sit in line at left-front, off court; upon rotation, last server comes out and sits at end of line; girl at head of line goes into game in left front position.

3. Skill tests

- a. serving—number "good," or placement
- b. placement of returns
- c. wall volley—20 or 30 sec.

1. Recreational modifications

- a. Co-recreational games—various combinations of boys' and girls' rule.
- b. "Anything Goes" game—plastic beach ball; play off wall, ceiling, unlimited hits, etc.

Serves

1. Underhand (basic)

1. Ball held low on left hand, feet together; right hand back, step on left foot as the hand swings forward; left knee slightly bent at finish.
2. Avoid tossing the ball; imagine you are hitting it off a tee.
3. Straight swing and low follow-through; like an under-hand pitch.
4. Hit ball with either flat top of fist (seems best for beginners), or partial fist or open hand (more advanced).

2. Sidearm
 1. Left side toward net.
 2. Ball held nearly shoulder high.
 3. Hitting arm swings parallel to floor, does not drop down as in the under-hand serve.
 4. Avoid over-hitting, as this is a powerful serve (also, stress everyone's keeping alert to avoid being hit during practice!)

3. Punch (overhand)
 1. Face net.
 2. Toss ball directly in front of body, not too high.
 3. Punch at ball with back of fist; use true punching extension, not a swing.
 4. Step into hit on left foot.

4. Tennis (overhand)
 1. Nearly face net, but on a slight diagonal.
 2. Toss ball quite high, in front and slightly to right of body.
 3. Swing hitting arm as a tennis racket.
 4. Reach and stretch high to time hit at highest possible point, swing through and then downward.
 5. Step into serve on left foot; momentum may bring right foot around.
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* From the Workshop of the Association of Women in Physical Education of New York State (AWPENYS), Bronxville Senior High School, Bronxville, New York.

Discussion

1. Distinguish between the terms *games* and *sports*.
2. Indicate the place and value of each of the following in the high school physical education curriculum and illustrate by naming specific activities: (a) individual sports, (b) dual sports, (c) group sports, (d) team sports.
3. To what extent can one learn golf out of a book?
4. Is there some danger of physical education teachers doing too much telling, which results in too little pupil activity, participation, and learning? Discuss.
5. How important are sensory aids (photographs, blackboard diagrams, demonstrations, and so forth) to the learning of activities?
6. Take some team game like touch football, soccer, or hockey and outline the specific procedures you would employ in teaching it to a class of relative beginners. Justify each procedure.
7. Why is it important to match the drill exercises in a sport to the situations in which the learner will perform when he is ready to use the skill in a game?
8. Explain why the teacher's greatest contribution to the student in learning a new motor skill lies in his ability to demonstrate good form, anticipate early indications of bad form and keep them from developing, and supply a critical analysis of the learner's performance that the learner himself is in no position to do at this stage of the learning process.
9. Discuss the pros and cons of loop films for teaching skills. Suppose that you were teaching the forehand stroke in tennis, had a class in a semidarkened gymnasium, and let the projector run so that the students could study the form, try the stroke, watch the screen again, and even try the stroke while watching the screen. While this goes on, the instructor is making running comments on the film, circulating about the class, and helping the individual students. With an eight-foot film, the entire film keeps repeating the sequence every 20 seconds. Is this good procedure?

Reading references

(Note: The number of books available and dealing with the techniques of specific individual, dual, and team sports is so great that the authors merely present a sampling of the books that include consideration of a number of sports in each book.)

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Rhythrical activities

People the world over have always danced. In the American high school curriculum the teaching of dance and participation in extra-class dance activities should be given as much time as any of the other activities that are usually included in the total program. No activity produces more efficiency and beauty in expressive movement which we normally associate with grace. Other values are the creative expression possible, the socialization, the kinesthetic awareness, and the benefits to posture and body alignment. The development of muscular strength and organic power should also be mentioned. Students experience practice in democracy as they participate in this cooperative group activity.

Inhibitions toward creative expression in movement and rhythm develop largely from lack of experience in the lower grades and from false notions that special talents or skills are needed to enjoy dance. In dance, as in most areas of curriculum content, adequate experience, good teaching, and consideration for progression in the elementary grades should provide students with a background of attitudes and skills that make further progression and enrichment easier for the high school teacher. In no other activity is the personality and skill of the instructor more important for developing

attitudes and creating an atmosphere for enjoyment and satisfaction.

The various forms of dance suitable for inclusion in physical education classes are usually studied separately. Brief mention is made here of the fundamentals of rhythm, the social forms of dance, including square dance, folk dance, and ballroom dancing, tap dance, and modern dance.

RHYTHM

Rhythm in activity can be thought of as a patterned flow of movement characterized by a regular recurrence of emphasis such as a beat or an accent. Probably no good athlete is arrhythmic or unable to sense accurately rhythmic units and make precise physical response to the time aspect of movement. We use the terms "poor timing" and "lack of coordination" to describe the poor performer. In contrast, for example, the good high hurdler will sing "Tah-rum-ta-rah" as he takes his three steps between hurdles, in order to

Courtesy West Bend High School, West Bend, Wisconsin



Dancing with a purpose

keep his rhythmic stride. In this, as in other athletic activities, the body is an instrument of finer self-expression. Education to this end should start in early childhood.

In elementary rhythms, students should have experienced the basic forms of locomotion—walking, running, leaping, hopping, skipping, galloping, sliding, and jumping—in a variety of combinations and rhythmic patterns. Some suggested procedures are:

1. Rhythmical accompaniment, such as drum beats, clapping, or strongly accented music (preferably the piano), is helpful in developing precision in the perception and execution of rhythm patterns emphasizing different aspects of time.
2. A good demonstration by the teacher or capable students will save much time and talk and be more effective.
3. Group rather than individual demonstrations are more effective with adolescents, who tend to be self-conscious.
4. Start with the skill level of the group and proceed to greater complexity from there.
5. Be sure that students understand the language of the terms used, such as tempo, meter, and phrasing.
6. Be sure that basic steps or movements are mastered first, but fit them early into some variation or pattern in accordance with the phrasing of the music.
7. Try to help students to live the activity and to enjoy music and movement.
8. Without imagination, any dance activity becomes merely a routine series of steps. The teacher should help the student to visualize movement, to translate it into action so that maximum satisfaction results.
9. The modern teenager does appreciate rhythmic skill in others and longs (often secretly) for it in himself. Sometimes approaching rhythmic patterns as feats of coordination brings marked success in teaching results.

FOLK DANCE

Historically, the folk dance expresses a wide range of human feelings, and the life of various national groups is enacted in rhythmic patterns. As one watches the native folk dances of peoples in many lands, one is impressed by the spontaneity, naturalism, and the

sheer pleasure expressed by the dancers as they dance such dances as the Highland Fling, the Sword Dance, or the festive dances of planting or harvest time.

Folk dances vary from the very simple and mild to the very complicated and strenuous and therefore make excellent content for progressive units. In no other activity, perhaps, is the enthusiasm of participants more dependent on good instruction and teacher personality. Method is therefore important.

1. Always name the dance, giving background information, its origin, and the customs of the country from which it comes. Use pictures of the people of the country dancing in authentic costume when they are available.
2. Basic steps or movements, such as those indicated for rhythms plus the two-step, step-hop, polka, schottische, waltz, and mazurka, should be learned and quickly woven into meaningful, simple dance patterns that combine several movements. Stress whole-part-whole method. Pupils should feel that they have danced the first day of class.
3. Have pupils listen to the music and understand its time and pattern before proceeding to try it. Develop the difficult steps separately. Get the basic movements well in mind before attempting to get the details perfect. The direction of a toe or the placement of the hand can come later.
4. Demonstrate and encourage the students to visualize the movement. Begin with the very easy dances that everyone can understand and that the students can learn as they dance with the leader. Those dances which are taught in a circle formation lend themselves to this best.
5. Avoid counting but use accented cues describing the movement, such as step-slide-hop.
6. Use only one cue at a time. Never call, clap, stamp, or tap at the same time.
7. Promote the use of imagination and encourage freedom of spirit. Try to eliminate self-consciousness, inhibitions, and fear of mistakes.
8. Stress informality and natural social contacts. Unless you see some facial expression of joy in the faces of the participants something is wrong.

9. The folk dance is not to be taught as an exercise but rather as a joyful activity rich in social outcomes, imagination, and dramatization.
10. Creativity can be encouraged by permitting individual students and groups to create new dances based on fundamental movements they have learned. At the same time it is important that students distinguish between original combinations and figures and authentic folk dances.
11. Seasonal programs, pageants, and festivals give rise to motivations for learning specific dances. For special May Day or Christmas programs, for example, correlation is possible with English (script writing), music (choral and instrumental), social studies (authenticity of costumes and historical episodes), art (sets and design), and home economics (costumes).

SQUARE DANCE

The square dance has developed as the traditional American folk dance. If one can walk, one can learn to square dance, for this dance form is based on the simplest form—the walk. Square dancing can be enjoyed especially by beginners with no skill as well as experienced dancers, because it is vigorous and active, informal, and fun to do. It is a great socializer and good preparation for ballroom dancing, especially for self-conscious students, because it focuses their attention on the caller and what he is saying rather than on themselves.

The following general principles and procedures for teaching the square dance are suggested:

1. Dance clothes should be informal and comfortable. Heels should be flat.
2. For instruction use a large circle formation of couples with the lady always on the right of her partner.
3. Have the class walk through the figures slowly without music as you repeat the directions.
4. The basic square dance step is a walk—definitely not a skip. Some dancers use a two-step, which works very well. By avoiding skipping, much of the rowdiness can be prevented.
5. Start with simple steps and call various combinations of the

figures just learned. There are many elementary dances that involve only the swing and promenade. Use these and get students dancing as soon as possible.

6. Get started on a simple dance as soon as possible.
7. For real enjoyment of the dance, the dancer must learn the basic figures, listen to the caller and carry on with a relaxed springy walking step in time with the music.
8. Give students a chance to listen to different callers on records and to students who are interested in calling.
9. Stress recognition of the calls and the number of steps and counts required for each figure.
10. Be sure that all students hear and understand the caller at all times.
11. Make sure that all understand where their home positions are and that they return to that position.
12. Distinguish between the characteristic figure, which usually is the same as the name of the square dance, the break, which is used between the main figures of the dance, the introduction, and the ending.
13. Present dances that vary in tempo and type; that is, visiting couple, symmetrical, line dances, and those with singing calls. The following basic calls are listed somewhat in progression:

- a. Square Your Set!
- b. Honor Your Partner! Honor Your Corner!
- c. Circle Left! Circle Right! Circle 4! Circle 6 or 8!
- d. Do-Si-Do Your Partner!
- e. Swing Your Partner! (It may be easier to teach the walk swing first and then progress to the pivot swing.)
- f. Promenade Your Partner!
- g. Sashay! Head Couples Sashay! Side Couples Sashay!
- h. Balance Your Partner!
- i. Allemande Left Your Corners all!
- j. Grand Right and Left Around the Hall!
- k. Star by the Right! Star by the Left!
- l. Ladies Chain!
- m. Right and Left Through! Right and Left Back!
- n. Western Do-Si-Do.⁷

⁷ Fred Leifer, *The Lili Abner Official Square Dance Handbook* (New York: A. S. Barnes & Company, 1953), p. 19.

14. All of the above are learned functionally by use in simple combinations. One starts with the simpler calls and gradually proceeds to combinations involving more advanced calls. Students enjoy frills, such as the dressed-up grand right and left and the turn and balance after a promenade. Teach them.

ROUND DANCES

These dances, which are also called couple dances, had their beginnings in Europe, but they are popular in this country as well. The couple dances that were among the earliest danced in this country—the waltz, two-step, polka, schottische, and varsouvianna—are still danced frequently. They might well be taught in a unit of square dancing. Opportunity for creativeness is present for it is acceptable to invent combinations of step patterns borrowed from folk, square, and ballroom dancing. The list of round dances that have continued to be popular might include Old Time, California and Texas Schottische, which are based on the schottische step, Jessie and Cotton-Eyed-Joe Polka, Black Hawk, Veleta, and the Mexican Waltz.

Since the step combinations are set, which makes leading and following less to be dreaded by the beginning dancer, they provide a good introduction to ballroom dancing.

MIXERS

In all dance units—square, folk, and ballroom—"mixers" should be used. These are dance patterns designed to move people to new partners so that socialization can better be assured, for socialization is one purpose of teaching dance. During a school party or mixer, these activities are perhaps used more frequently than at a small group dance. They make excellent "ice-breakers" at the beginning of a party and maintain interest through an evening's entertainment.

A few suggestions for use would include:

1. Plan carefully not only the specific mixers to be used but where in the program and for how long they are to be used.
2. Be sure all are having fun while doing them.
3. Never embarrass anyone by using an inappropriate mixer dance.
4. Consider the age group and their experience when planning

this form of recreation. High school students particularly have specific ideas on what is acceptable for their age group.

5. Stress courtesy at all times.

There are literally hundreds of these mixers. A short list of mixers would include Glow Worm, Bingo, Hokey Pokey, Patty-Cake Polka, Sicilian Circle, Little Man in a Fix, Crested Hen.

BALLROOM DANCING

Ballroom dancing, frequently referred to as social dancing, is an important social and recreational activity for high school students. "The ballroom dance affords a variety of quality in movement through the inherent characteristics of its forms: the lyric lilting waltz; the smooth subtle tango, the lively bouncing samba, the interesting rhythm of the rumba, the abandon of jitterbug dancing."⁸

The extent to which ballroom dancing should be taught in the public schools is still being debated in some communities. However, the desire of young people to learn to dance is apparent in practically all preference polls.

Many books dealing with special and specific methods are available, but the following brief suggestions aimed at high school teaching are made:

1. Ballroom dance classes should be conducted on a coeducational basis.
2. It is important that a male athletic coach or physical education teacher cooperate actively with the girls' physical education teacher in conducting the class. High school boys have a desire to learn but need the presence of a respected male teacher to help them overcome their squeamishness about participating in a dance class of any kind.
3. In general, piano accompaniment is more adaptable for class use in the beginning of the ballroom dance unit.
4. Keeping time to the music is essential. Have the students listen to the music alone, clap accents, walk in different tempi, and combine slow and quick steps.

⁸ Anne Schley Duggan, "The Place of Dance in the School Physical Education Program," *The Journal of Health, Physical Education, and Recreation*, March 1951, p. 26.

5. Use a great many social mixers to change partners frequently. This will break down inhibitions and increase the acquaintance volume.
6. Use a few student demonstration couples who have been willing to come voluntarily for a few extra lesson periods in order to assist with the lessons.
7. All students should learn both boys' and girls' parts. First teach the boys' part for each step, then very little practice is needed on the girls' part before putting them together in couples.
8. Present carefully but interestingly proper etiquette in the ballroom and on the dance floor.

TAP DANCE

This form of dancing has a place in the curriculum. Units of tap dancing are particularly valuable when rhythmical activity is presented to large classes.

Since both boys and girls enjoy tap dancing, it lends itself very well to coeducational classes. It develops motor coordination, especially of the feet and legs, it is fun to do, satisfaction can be high, and it can be a creative experience even though strict rhythmical performance is essential. Suggestions for teaching follow:

1. A teacher should be particularly careful to have only beginners in a beginning class. There will be several levels of skill developed in a short period of time within a class in tap dance. In order to eliminate as much as possible of the difficulty that will arise with the variations in skill, a teacher must insist that all are beginners when the instruction starts.
2. Encourage students at all times to listen to the music very carefully. This is especially necessary in the early stages of a beginning class. Later, students will listen almost automatically and become unconscious of any effort involved in listening to music.
3. The teacher should instruct her class by dancing facing the class. This necessitates her performing steps of a dance on the foot opposite to that which the class will be using. This reversing of feet is a very simple technique to learn and is much better for the instructor since she is then always facing the class and can observe her students much better.

4. The instructor must be perfectly sure of the steps she is to teach. She should not make errors in her teaching nor should she have to refer to notes or a book for instruction as the dance progresses. The class will lose interest in the dance being taught as well as respect for the instructor.
5. Allow beginning students ample time to practice specific steps or groups of steps either alone or in small groups of two or three persons. Students learn difficult steps faster if they are given an opportunity to think the steps through by themselves slowly and often without music for short periods of time.
6. A teacher of tap dance should keep the steps and dances within the level of a beginning class, but then should demand a good performance on the part of all students. Good performance will naturally vary according to individual abilities.
7. Because of the great variations in the levels of skill within a single class, the instructor must gauge her teaching to hit a happy medium. She must not teach the most skilled dancer in the class, nor should she slow the entire class to match the efforts of those having difficulty.
8. An instructor should give the more skilled beginners (and there will be some) additional projects that will keep their interest. For example, she may assign groups of three or four dancers an original routine as part of their final examination. This kind of assignment keeps the better dancers busy during the periods in class when they find no practice necessary to keep up with the other students.
9. The instructor should teach the class a simple short dance as soon as possible. This develops great interest in the unit from the first day and gives the students a sense of accomplishment that they need during the early stages. A short, simple but complete routine taught during the first class period helps stimulate interest.
10. Basic dance steps of a simple nature should be taught first, followed by a dance that employs these steps. Follow this with more difficult steps, then more difficult dances.
11. All steps, including the simple dance steps, should be performed with the music as soon as possible. Students will enjoy

- drills to perfect performance if the instructor allows practice to be done with music.
12. If a specific dance involves more difficult steps, the instructor may find it helpful to ask the students to sit down a moment, listen to the music once or twice, and clap the rhythm of the steps with the music.
 13. The instructor should, if steps in a dance are causing some difficulty, have the tempo of the music slowed down and allow the students to learn the steps in a slower tempo *but always with the correct timing*. The timing should not be changed to assist in learning. It won't help!
 14. Tap dance should be taught, above all, as a rhythmical activity that is fun. The instructor must enjoy and be happy in teaching tap dance. She must recognize tap dancing as marvelous training in rhythm, and rhythm is certainly a necessary element of comfortable movement—not only in dance but in everyday activities as well.

MODERN DANCE

Modern dance, often referred to as contemporary dance, in education should probably be called creative dance to distinguish it from the work of professional artists. As an art form, creative dance differs from other types of dancing by the fact that it is a vigorous physical activity in which the dancer endeavors to communicate his own experiences and reactions through the medium of movement. The body is used as an instrument of expression; no set vocabulary of movements has to be learned because movements are invented to fit specific ideas. Modern dance is creative rather than imitative. Its skills are based on natural movements which may be varied and combined to tell a story, evoke a mood or emotion, or depict fantasies or abstract design.

Exercises for body conditioning and techniques to extend the natural range of movement should be practiced only as a means to the end of more forceful expression, never as an end in themselves. Teenagers like techniques and need little motivation to participate in them.

In creative activity the teacher should encourage students to use ideas from their own experience. She may stimulate her students by

suggesting that they choose from a particular area, such as dancing to a specific piece of music, dancing to verse which they speak themselves, dancing their reactions to certain colors, pictorial designs, or school events. These may be improvised freely at first and then shaped into real dances. In this process the teacher acts as a guide. She may call attention to certain aspects of space, time, and form and set problems emphasizing them for small groups to solve. The resultant compositions are not dances but studies or fragments that may serve as a basis for later development into dances.

Some suggestions concerning the modern dance follow:

1. Teach as informally as your situation allows. Use informal and open-order formations for practice. Do not insist on straight lines and perfect circles or any definite organization unless the technique depends on such formation. The teacher should act as guide. Unless a cooperative and friendly relationship is established, little can be accomplished in a dance class.
2. In order to avoid too much strenuous work, combine, alternate, and contrast vigorous with less demanding activities.
3. Although lesson plans are important, the teacher should never adhere to them so strictly that she misses opportunities for student creativity when it arises or ignores extra practice when it seems desirable. This does not imply, however, that planning is not extremely necessary. Teaching on the basis of momentary inspiration is apt to be hit-or-miss. Planning gives organization, direction, and purpose to a lesson.
4. Always use big movements that involve the entire body in early lessons. This practice is essential to increase the range of movement and to lead students from commonplace gesture to the movement of dance.
5. Contrast or combine locomotor with axial movement to prevent leg muscles from being overtaxed.
6. Use a variety of ways to stimulate students to construct a dance form.
 - a. Present a variety of materials, not just one step or body movement. Variations and combinations of given materials will then show students the possibilities of making variations of their own.

- b. As a first step in construction, have students make a simple plan with a partner. This adds to the fun and is something that students often do spontaneously.⁹
 - c. In working on movement problems, allow beginning classes to work in groups of about five to eight students. In such groups individuals are not forced to produce things prematurely. The responsibility for the problem is that of the whole group and does not fall on a single individual. Solo dances and free improvisations are the province of the more advanced. Have groups demonstrate the results for class appraisal.
 - d. With a movement theme taught by the instructor or devised by members of the class, give each group a title that will shape the variation they will make.
7. "In excellent teaching of dance all the inherent possibilities for creative work must be realized. However simply or even crudely this is accomplished no tenet of the dance as an art should be violated. To teach *dance* and not *ready made dances* becomes the important objective.
- "It should be eternally remembered that dance in education is for the benefit of the participant, it presupposes no on-lookers, it is done *with* and not *at* others. Its function is not to entertain the parent or satisfy the ego of the teacher by its studied polish and perfection but to provide a vital and significant creative experience."¹⁰

Discussion

1. Why is a good rhythm program in the elementary grades so important for future development of the dance at the high school level?
2. Indicate by specific steps how you would teach basic rhythms to first grade children.
3. Select a folk dance that might appeal to boys and girls of high school age and indicate how you would proceed to teach it.
4. Assuming that students have learned the basic calls and formations in the square dance, select a simple dance, and explain how you would teach it. Be able to give the calls yourself.

⁹ See, for example, Lockhart, A., *Modern Dance, Building and Teaching Lessons* (Dubuque, Iowa: William C. Brown, 1951).

¹⁰ Williams, Jesse Feiring, Dambach, John T., and Schwendener, Norma, *Methods in Physical Education* (Philadelphia: W. B. Saunders Company, 1937), p. 220.

5. What do we mean by creative dance? Assuming that students know the beginning techniques and vocabulary, how would one proceed to teach from this point?
6. Many communities have citizens who claim that the dance in any form has no place in the school. How would you meet this issue if you were faced with it?
7. Indicate your exact procedures in teaching social dance to seventh grade boys and girls who have had no previous instruction but are willing to learn.

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Aquatics

In the broad sense, aquatics refers to any sport practiced on or in the water, such as water skiing, scuba and skin diving, swimming, canoeing, sailing, small craft handling, and dozens of other activities. Here again, the students' learning outcomes fall into various categories, such as: knowledges and understandings (artificial respiration, tacking in a sailboat, righting a canoe in the water); skills (ability to apply methods of rescue in the water, ability to apply water balancing techniques such as sculling, finning and leveling, skill in handling a rowboat, canoe, or sailboat); attitudes (pool etiquette, acknowledgment of rights of others in locker room and pool, a reasonable attitude toward his own limitations in and around the water but desire to improve).

It is obvious that, with the inclusiveness of aquatics, many separate volumes are needed and are available to deal with the detailed methods of teaching for each one. Method must be appropriate to the activity taught.

Some general principles and procedures applied to the aquatic area of swimming in which most physical education teachers have to teach are here suggested.

GENERAL PRINCIPLES

A beginning swimmer is considered to be a person not competent to swim alone in deep water for any appreciable length of time.

On the basis of careful research, Scott recommends the following procedures for beginning swimmers:

1. Beginners and nonbeginners should be segregated for instruction whenever possible.
2. Provide adequate help to care for slow learners in order to avoid handicapping the majority of the class.
3. Accelerate time schedule for presentation of skills to enable class to learn new skills while perfecting others.
4. Introduce swimmers to deep water and safety skills, i.e., tread-

ing, change of position and direction, at the earliest possible moment. (This means second or third lesson.)

5. Keep achievement records regularly as an incentive to students and a means of directing student effort when the instructor is otherwise busy.¹¹

Scott further suggests the following principles of method:

1. Swimmer must be able to accomplish something new each lesson.
2. Swimmer must be made to feel confident.
3. Swimmer must be kept practicing on something which is a challenge to him.
4. Swimmer must be praised as liberally as possible.
5. Swimmer must be protected from failure, must not be kept on a skill he does not readily acquire.
6. Swimmer must be made self-sufficient, thoughtful and self-analytical.
7. Swimmer must not be coached on small unnecessary details until he feels confident on the total skill.
8. Swimmer must be taught always in positive terms and with feelings of confidence. (*Do this!* Avoid saying or letting him think he must not do something.)
9. Swimmer must have clear-cut idea of ultimate and immediate goals.

The final criterion which composed the test of becoming a swimmer as employed by Scott was the "15 Minute Keep-Up Test," consisting of (a) headfirst entry into deep water, (b) level off and tread two minutes, (c) swim five lengths—any stroke, but only one length on back, (d) keep up for the remainder of fifteen minutes (length of pool was 60 feet).

The average learning time to attain a level of performance to pass this test was 5½ hours distributed in half-hour lessons, but the great majority of swimmers can be taught to pass the 15 Minute Test in an eight-week term of 15-16 lessons or less.

The lesson progression used in this study by Scott was as follows:

- Lesson 1 Breathing, floats and recovery, back stroke (elementary)
- Lesson 2 Back stroke, turning over
- Lesson 3 Review, vertical float in deep water, back stroke length of pool

¹¹ M. Gladys Scott, "Learning Rate of Beginning Swimmers," *Research Quarterly*, March 1954, pp. 91-99.

- Lesson 4 Review, treading (side stroke for few who were ready)
- Lesson 5 Review, deep water change of position, side stroke
- Lesson 6 Review, side stroke length
- Lesson 7 Review, side stroke, more than one length, continuously if possible, diving
- Lesson 8 Review as needed or new skills added if slow learners have not tried previously. Develop endurance by continuous, relaxed swimming.¹²

In this approach, the side stroke was employed as the basic stroke. Since mental attitude is the chief factor in progress in learning by beginners, the side stroke was chosen because students felt that they were getting somewhere sooner. Note that the whole stroke was emphasized while emphasizing one part of it. The whole method is more economical of time and more effective because it coincides more nearly with the way in which learning takes place. While the student tries the whole stroke, the instructor can call the student's attention to certain parts and help him to see and feel the relation of the parts in the whole. Actually the method employed is the part-whole-part method.

Specific progressive tests from beginners to Senior Life Savers are in existence. Different colored swimming caps may be worn to designate swimmers of different rank. Red for nonswimmers, yellow for those who pass the American Red Cross Standard Beginners' Test, consisting of jumping into the water over own depth, level off, swimming 25 feet, making a sharp turn, and returning 25 feet. Next might be the sharks, porpoises, star swimmers, and Junior and Senior Life Savers, with green, blue, black, and white swimming caps, respectively.

BEGINNING SWIMMING

The American Red Cross and the YMCA have done more to advance techniques of swimming instruction than any other institutions. Any teacher of swimming, canoeing, or life-saving should be conversant with the teaching materials available from these sources.

Thomas K. Cureton, as chairman of the National YMCA Aquatics Committee, has developed a series of five tests, each containing a varied number of elements of instruction (stunts) and scientifically

¹² *Ibid.*, p. 99.

- ing, change of position and direction, at the earliest possible moment. (This means second or third lesson.)
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¹² *Ibid.*, p. 99.

arranged progressively for teaching purposes.¹³ These create bases for comparison for groups or individuals (self-testing) and provide excellent methods of motivation to be employed in teaching. They have been scientifically validated and aid the teacher in diagnosing pupil difficulties and in giving the right cues for learning. They also provide some norms and standards for evaluating pupil progress.

The swimming stunts and the progressive up-the-ladder challenge in each category appeal to young people. The five steps on the ladder up to the Life Saving and Water Safety insignia are as follows:

1. *Minnow Club* (beginners): 21 stunts arranged in order of difficulty from No. 1, "See Bottom" (put face in water, open eyes, and look at bottom or object), to No. 21, "Coordination Swim" (jump feet first into water over head, swim 25 feet, ony stroke, turn around, and return to starting place).
2. *Fish Club* (low intermediate): 10 stunts ending by swimming 100 yards using two strokes.
3. *Flying Fish Club* (middle intermediate): 10 stunts with the last being o 220-yard swim using ony style.
4. *Shark Club* (high intermediate): 10 stunts, including bobbing and floatlog, underwater swim, running springboard plunge, back crawl with start and turn, life-saving stroke, breast stroke with start ond turn, baek dive, baek jackkoife, running front dive with half twist, and swim 440 yards any style.
5. *YMCA Life Saving and Water Safety*: Juniors (under 15 years), Seniors (15 years).

Appropriate insignia are available for those successful in each category.

Discussion

1. What, actually, does the term "aquatics" include?
2. Set up a panel discussion in the class entitled "A Camp Aquatic Program." Choose your main topics and have panel members elect to present the high points of one. Topics might include initial swimming classification tests, the swimming program, the checkboard-buddy supervision or other safety system, life-saving, canoeing, boating, water skiing, skin diving. Stress specific details and methods of teaching.

¹³ Volume II—New Series Y.M.C.A. Aquatic Literature, Association Press, 291 Broadway, New York 7, N. Y.

3. Outline the specific procedures you would employ to teach beginners in canoeing. In what order and how would you teach the primary strokes? The remaining strokes?
4. Set up a panel in the class for presentation and discussion of specific methods for teaching the following to students who have passed their beginner's tests:
 - a. The elementary backstroke.
 - b. The side stroke.
 - c. The breast stroke.
 - d. The crawl stroke.
 - e. The trudgen stroke.
 - f. The vertical float.
 - g. Treading.
 - h. Elementary diving.
5. Set up a panel in the class for presentation and discussion of specific methods for teaching some designated recreational games, stunts, and relays as an adjunct to the swimming program.
6. Set up a panel in the class for presentation and discussion of specific methods and principles for teaching formation and synchronized swimming. What are the basic skills for this?

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Self-testing activities

As in other areas of the physical education curriculum, an adequate program beginning with the kindergarten makes a tremendous difference in the students' level of skill by the time high school is reached. This is true of swimming, dancing, all activities, but especially in stunts, tumbling, and gymnastics.

To watch an untrained student jump over a buck or try to do a simple forward roll is often discouraging to the teacher. These activities have a place in a balanced curriculum where teachers are concerned about adequate musculature and strength—particularly of the upper body, flexibility, balance, agility, general total body coordination, and physical courage.

In self-testing activities there is self-competition for improvement and satisfaction in the challenge for achievement and mastery, but such social motives as recognition group status are not entirely lacking.

Courtesy Norfolk City Schools



Development begins early

The following teaching suggestions are worth noting:

1. Class organization in tumbling and stunts on the apparatus is most important. Where several squads are working on the mats, or where several pieces of apparatus are in use, pupils should be grouped in terms of ability. This allows the teacher or leader to select exercises according to the abilities of the squad members. Squads should be kept small and the pupils given an opportunity to set exercises of their choosing after showing ability in the required exercises.
2. In all exercises a spotter or safety man should be present. This should be the teacher and/or several student leaders who have been given specific instruction in this important art of assisting in stunts on the apparatus and in tumbling. Such things as proper use of mats and appropriate warning cues are also important safety factors.
3. The good teacher in this area is one who knows the mechanics and timing of the stunts by having learned them from actual experience in performance. Successful performance depends upon proper timing rather than strength. For this reason, a stunt done gracefully looks rather effortless.
4. Progression is important. The degree of difficulty can be more easily judged in these activities than in others, and more advanced stunts are based on earlier ones. Mastery of one stunt is essential before proceeding to the next more difficult one.
5. A good demonstration by the teacher is worth a hundred words of oral description.
6. Insist on correct procedures. Supervise carefully by demonstrating from a mat located centrally in the middle of a hollow square of mats on which small squads of six to eight pupils perform. In this way one can readily observe the work of all squads, and all squad members can readily observe demonstrations.
7. Rotating squads make possible experiences on all types of apparatus and several types of tumbling.
8. Be sure that each student understands exactly what he is trying to do. A clear mental picture of the exercise is necessary and once the exercise is started it should be carried through to completion. Accidents happen when people change their minds half-way through a dive, vault, or flip.

9. Specific self-check lists of progressively more difficult tumbling and apparatus stunts are useful self-testing techniques for helping students appraise and chart their own progress.

10. A basic list of fairly easy stunts required to be tried by all, plus a selected list of optional but more difficult stunts, will provide a challenge for students of all ability levels.

11. Additional motivation may be provided by gymnastic meets within the class and on an intramural basis.

Discussion

1. Over fifty per cent of the boys admitted to preflight schools during World War II were found to be deficient in upper-body strength, especially in muscles of the shoulder girdle, the triceps, the abdomen, and back. What are the implications that might be drawn for physical education programs for boys?

2. Describe two exercises for beginners (girls) on each of the following pieces of apparatus:

- | | | |
|-------------------------|----------|------------------|
| a. Horizontal ladder | d. Rings | g. Horse |
| b. Horizontal bar (low) | e. Ropes | h. Stall bars |
| c. Parallel bars | f. Buck | i. Tumbling mats |

3. Do the same as in (2) for boys.

4. Indicate how you would "spot" students on each of the pieces of equipment mentioned in (2).

5. Indicate how the beneficial movements of hanging, bending, stretching, turning, twisting, lifting, pulling, and jumping are involved in apparatus stunts.

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Camping and outdoor activities

Thomson, the great English biologist, stressed the deeply-rooted, old-established, far-reaching vital relations between man and nature and the degree of impoverishment that results to man when he is denied certain fundamental impressions that come from sojourning with nature.¹⁴

"At-homeness" in the world of nature, therefore, is perhaps one of the main objectives of camping and outdoor education. Other objectives are safe and healthful living, constructive use of leisure, democratic social awareness and sensitivity, and emotional responsiveness to natural beauty, to spiritual meanings and values, and to a sense of kinship with nature and our dependence upon it.

NEED

Only about 12 per cent of all American children have had camping experience. It is no wonder that so many of us are "outdoor illiterates." Dr. Eliot, the late President of Harvard, was reputed to have stated some years ago that he considered the development of camping to be one of the most significant educational achievements in the last quarter century.

Over 60 per cent of our population is collected in cities where they have "lost their roots in the earth beneath them and their knowledge of the fixed stars in the heavens above them."¹⁵ Thus, people have been denied many of the elementary experiences of humanity that only renewed contacts with nature can give. Consequently, many of the fundamental needs of youth are not being met.

Inadequate housing, lack of opportunity for useful outdoor work

¹⁴ Thomson, *op. cit.*

¹⁵ Walter Lippmann, *New York Herald Tribune*.

experience, inadequate recreation space in parks and playgrounds, small yards precluding space for gardening and play, congested streets and roads precluding cycling, and in some new urban developments, even the total absence of sidewalks for the walker, constitute our meager offerings to growing city youth.

Our obsession with the idea that education comes only from books prevents many a youth from getting a richer educational experience. Giving book learning without foundation in first-hand experience is as unsound as is the casual contempt for books as essential aids in effective living and learning. Camping and outdoor education under wise leadership fortify both aspects by coordinating first-hand experience with the valuable sources of inspiration for a higher adjustment that books provide.

It is true that interest in organized camping is highest between the ages of 9-12 years, drops during the 12-15 year age period and is relatively weak after 15 years of age. Despite this, adolescents show renewed interest in a different kind of camping and outdoor experience. Furthermore, many high school girls and boys in the junior and senior classes have the opportunity of becoming junior camp leaders and should receive some informal training in such duties. The responsibility for such training often falls to physical education teachers.

TYPES OF CAMPING AND OUTDOOR EXPERIENCES

Outpost camps with a cabin containing minimum kitchen and sleeping facilities lend themselves to informal, rugged camping for small groups of 15 to 25 people. Separate wings provide for mixed groups and coeducational experiences in canoeing, sailing, hiking, skiing, skating, snow-shoeing, and various camping experiences.

This type of outpost camp also provides a base for more rugged, primitive, hard-living experiences for older adolescent boys. Roughing it under strenuous conditions, freedom from the geographical limitations of a camp site and schedule making, responsible participation in planning and carrying out the program, all give a prominent place to discussion. Construction projects for camp improvement, mountain climbing, canoe trips, horseback expeditions, covered wagon expeditions are activities that challenge older adolescent boys over week-ends or extended holiday periods.

Day camps are located fairly close to the city and provide outdoor

living on a day-to-day basis. These are customarily summer programs operated for elementary school children and provide opportunity for handicrafts, applied science, swimming, cook-outs, athletics, and visits to points of interest within reasonable range. The idea, however, may well be applied to the outdoor education of adolescents.

Overnight school camping during the school year or in the summer provides opportunity for various grades or special groups (e.g., a biology class) to use the camp for periods ranging from a weekend to a week or more. A camp in this sense should be considered just one of the laboratories of the school. The classroom is brought to nature instead of vice-versa.

There is a definite trend in the direction of year-round school camping, although perhaps less than one hundred schools are actively participating in school camp projects.

WHAT HIGH SCHOOL CAMPING CAN DO

The school camp is an integral part of the total educational program. First, some of the activities more distinctly related to physical education and recreation are as follows:

1. Aquatics: swimming, life-saving, water games, fancy diving, small craft handling and sailing, canoeing, scuba and skin diving, and water skiing.
2. Hiking, exploring, and tracking.
3. Skiing, skating, snow-shoeing, tobogganing, and sledding.
4. Fishing (still, fly, casting, trolling), fly tying.
5. Woodcraft, axemanship, blazing a trail, safe use of fire arms in hunting, making archery tackle.
6. Outdoor games.
7. Construction projects: road and bridge building, dam construction, reforestation, cutting timber, and fire control projects.

Some camp activities related to practical education in the natural sciences and conservation are:

1. Water testing.
2. Use of fish shocking equipment (fish census).
3. Developing a classroom or camp library, laboratory or museum.

4. Elementary meteorology and weather stations.
5. Orienteering, use of compass, reading and making of maps.
6. Camp sanitation.
7. Geological studies, rocks, fossils, topography.
8. Use of fire-fighting equipment.
9. Elementary astronomy.
10. Identification of poisonous plants and methods of protection.
11. Photography.
12. Applied mathematics and surveying.
13. Bird watching.
14. Use of plants for food.
15. Survival training.
16. Evidence of abiding by existing conservation laws. (Timber cutting, cleaning and brushing, stream and lake population, erosion, fire control, hunting laws).

A suggested week's camping activities by a high-school group is illustrated on the facing page.

BASIC PRINCIPLES AND SUGGESTIONS

The school camp is an integral part of the total educational program. The camping curriculum should not be an isolated program apart from the total school curriculum. It should be a cooperative effort and by its peculiar nature must draw on many kinds of competencies in the faculty, student body, in the community and elsewhere, although physical education teachers and health specialists would, naturally, be expected and equipped to play a major role in the organization, administration, supervision, and evaluation of school camps.

There are values in the experiences of school camping which cannot be obtained in the classroom or gymnasium. At its best, under competent and friendly leadership, it provides functional learning based on first-hand experience with the realities of life. Careful preplanning and organization are imperative for success and best development of a camp program. This planning should start early in the school year and, of course, include students. It should be arranged so that the school curriculum is unbroken by the camping experiences. The camp enriches learning experiences and provides a more desirable environment for some particular phases of the curriculum for which the camp environment is better suited. Serious consideration should be given to the question of continuity

A HIGH SCHOOL CAMP PROGRAM¹⁴
64 Students—5 Program Groups

DAY	I	II	III	IV	V
Monday	Weather station Historical Luke Sunset vespers	Find the history of the area Weather station Hike to old homestead Sunset vespers	Felling trees and cutting wood Sunset vespers	Building a dam Completion of dam building Sunset vespers	Bird hunt Blazing a trail and woodcutting Sunset vespers
Tuesday	Fish conservation Evening cook-out	Trip to _____ Noon cook-out and hike	Planning session Building game shelters	Building animal shelters Fish conservation (sealing)	Trip to _____ Cook-out
Wednesday	Build brush piles for game Deer census	Find depth of lake Fish conservation Deer census	Tree planting Deer census	Tree planting Deer census	Fish conservation Bird trip Deer census
Thursday	Axe demonstration Gun demonstration Sealing and lumber mill trip	Axe demonstration Gun demonstration Clearing underbrush Build brush piles animal shelter Felling trees	Axe demonstration Gun demonstration Trip to _____ Noon cook-out Historical hikes to _____	Axe demonstration Gun demonstration Trip to _____ Noon cook-out Historical hikes to _____	Axe demonstration Gun demonstration Sawmill visit and cruising
Friday	Evaluation	Evaluation	Evaluation	Evaluation	Evaluation
					EVENING
Sunday	Planning by group Planning session and daily evaluation by groups Planning session and daily evaluation by groups Planning session and daily evaluation by groups Planning session and daily evaluation by groups	Camp council Guest speakers Guest speakers Storytelling	Games Singing Games Singing Games	Square dancing Storytelling Square dancing Dancing	Snacks Snacks Snacks Snacks Snacks in cabin

Note: One group was responsible each evening for planning the evening's activities.

¹⁴ Reprinted by permission of the C. V. Mosby Company, from *Education Through School Camping*, by Helen Manley and M. F. Drury, p. 336, copyright 1932, by the C. V. Mosby Company, St. Louis, Mo.

of contact as well as continuity and progression of experiences in camp. A high school class, a home room, or a biology class would provide such continuity of contact between classroom and camp activities.

Discussion

1. It is generally agreed that camping includes at least five elements—out-of-doors, recreation, group living, education, and social adjustment. Discuss each of these briefly in relation to camping objectives.
2. Suppose that your high school pupils requested a long week-end experience at a nearby outpost camp and asked for leadership in planning for a group of fifteen boys and fifteen girls. Outline some suggested activities and planning procedures to be presented to their student camp committee.
3. Outline an informal six-hour orientation course for senior high school boys and girls who will have junior counselor jobs in a summer camp for children, ages 9-12 years.
4. Discuss briefly each of the following camp skills and activities of the camp program:

Campcrafts (fire building, cooking, "sleepouts" and the like)

Arts and crafts (basketry, woodcarving, sketching)

Nature

Music

Games and sports

Dramatics

Dancing

Riding

Waterfront activities

Camp library

Private pursuits (opportunity for "inner-directed" activities)

Special events (rainy days, campfire programs)

Health and safety education

Shared work

Religious emphasis

5. Most present-day camp programs have little challenge for teenagers. What changes in facilities and program would you suggest to appeal to teenage youth?

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Social-recreational activities

Socialization is one of the important potential outcomes of physical education. It is the process through which individual members of society learn the ways of the group, become functioning members, act according to its standards, accept its rules, and in turn become accepted by the group.

At adolescence, group thinking and feeling are prominent and we find that membership on teams or in organizations with rituals, symbols and rules of membership not only gives purpose and direction to adolescents but also forms the basis for unified team action and for judging the standard of individual and social conduct.

Recreational activity is any activity that supplies its own drive. The interest and satisfaction is inherent in the activity in itself and

not in some ulterior reward such as financial gain or social prestige. The student paints a picture because of the sheer aesthetic pleasure and satisfaction involved or joins a noon-hour coed volleyball game with no conscious motive in mind but the pleasure of motor activity in a game under a blue sky.

Coeducational planning of social-recreational activities, committee work, acting as host or hostess, and operating the noon-hour mixers usually fall to students under the guidance of physical education teachers. These opportunities to foster good social attitudes and to increase the social efficiency and therefore the mental health of young people through experience in social affairs and group activities are somewhat unique to these teachers.

A few generalizations concerning these follow:

1. Seventh and eighth graders are often self-conscious and shy in coeducational games. Activities may be started with double lines or circles with boys and girls separate but on the same teams. As the team spirit develops, self-consciousness disappears and single circles with boys and girls joining hands becomes accepted without confusion.
2. Corecreational noon-hour programs in table tennis, volleyball, archery, shuffleboard, dart baseball, box hockey, and social dancing are normally welcomed.
3. Stunt nights, picnics, splash parties, square dancing, mixer games, skating parties, progressive parties, scavenger and treasure hunts, and "ice breaker" parties are illustrative of school-centered recreation activities in which physical education teachers may give guidance and leadership for moral character, ideals, and high social standards. These latter personality attributes are learned only in groups to which an individual belongs and, of course, with the proper setting and under competent and desirable leadership.
4. Although all students should be urged to play and be given the opportunity, the physical illiterates who have never developed even the minimum of skills have to learn to play. The physical education teacher should be aware of what is happening to many American children brought up on movies, radio, and television, which demand fairly simple sensory responses and deny development of expressive, dynamic, cooperative recreational skills which

can give health, tone and color to their lives long after their school days are over.

The function of the physical education and school recreation programs is not primarily to amuse and to entertain students but to give guidance and development to human personality. Teachers should endeavor to develop in young people the inner resources (interests and skills) for constructive recreation which one does not buy with cash.

Discussion

1. Suggest the organization and activity program of noon-hour recreation for a consolidated rural school (grades 7-12) of 500 pupils, the great majority of whom leave the school by bus at 3:30 PM.
2. You are in a high school (grades 9-12) where you have no coaching responsibilities but are director of the boys' club, which is under school control and functions in a nearby building that was formerly an elementary school. The girls' physical education teacher functions in a similar capacity for the girls. Plan a program jointly to meet the social-recreation needs of the students. (Note: the building is available every afternoon from 3-6 PM and two evenings 7-9 PM and all day on Saturdays.)
3. Discuss the possibilities of social-recreation activity in relation to some aspects of the coeducational intramural program.

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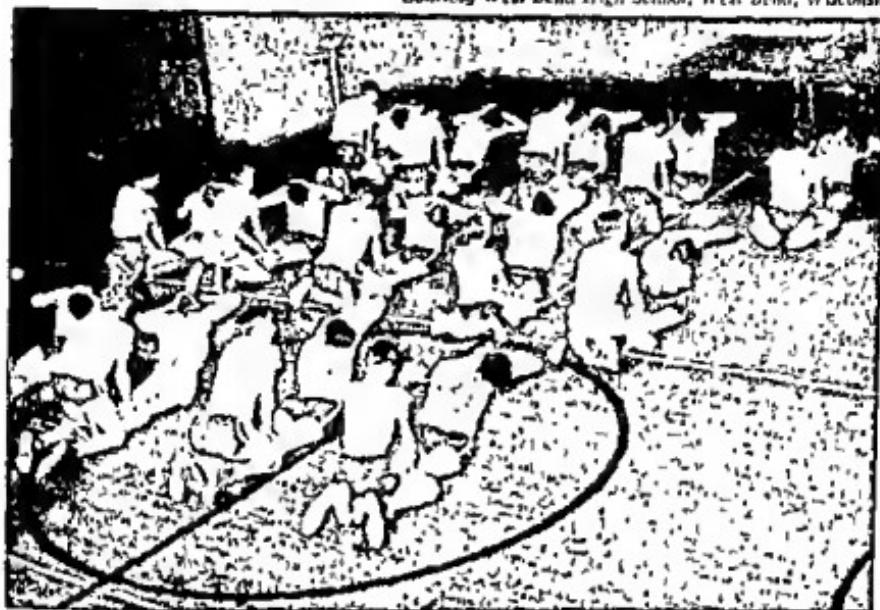
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Body building

BODY MECHANICS

The proper relationship of body segments to each other in static positions and in dynamic movement is important to individuals as they perform their daily tasks of work and play. To teach the students to stand, walk, sit, and perform daily tasks, sports, and play skills with efficiency is an important function of physical education. Adequate units of instruction in good mechanical use of the body and in relaxation techniques must be taught by the physical education instructor. Good muscle tone is an important basis for both good static and dynamic posture. The kinesthetic sense in movement is important. Better habits of good posture are acquired as the awareness of correct movement is sensed by the individual. Fatigue, strain, and stresses evidenced by pains in parts of the body are frequently the result of inefficient use of the body and musculature that is unable to maintain proper alignment of body segments.

Diagnosis and prescription is not the function of the teacher in the more extreme cases. Corrective exercise should be prescribed individually by a competent physician. A well-trained physical edu-

Courtesy West Bend High School, West Bend, Wisconsin

Physical fitness through training

cation teacher should be able to recognize cases of serious deviation from the normal static and movement patterns and should report suspicious cases to the parents, who may be completely unaware of the student's condition, and urge them to consult a competent physician. Teachers should be able to supervise medically prescribed exercises except in extreme cases. An alert teacher who is constantly aware of movement habits of pupils can help to avoid or correct poor habits of posture.

Some student objectives of the unit in body mechanics might include the following:

1. To strive for a good-looking figure or physique.
2. To know what constitutes a well-proportioned and symmetrical body and to achieve it through the application of learned skills.
3. To develop the strength needed to establish and maintain correct relationships of the parts of the body.

4. To achieve good alignment of body parts in both static and dynamic use of the body.
5. To be able to relax and to recognize the difference between tension and relaxation.
6. To conserve energy and lessen fatigue.
7. To learn specific exercises for the increase of muscle tone.
8. To develop habits of movement that are graceful, efficient, and effective.
9. To apply the knowledge acquired to daily living.

A few important principles and teaching suggestions are noted:

1. We should not be afraid of conditioning exercises for all. With girls it may be true that they need to be motivated to develop good muscle tone without which good body mechanics and posture cannot be attained. There may be some fear in many girls that they will lose their femininity if they participate in an exercise program. It is important for both boys and girls to recognize that better appearance results when weight is distributed evenly and when the total alignment is correct. The desire to be attractive in appearance is a strong motivator.

Class time in physical education is often too limited, which requires that a series of exercises be used for all. Make sure that the series of exercises used includes exercise for all important muscle groups. Students and teacher can explore the many exercises devised for various parts of the body and cooperatively develop a series that may be given an appealing name such as "Slim-trim 12" or "Boilermaker Special." A graded series of several exercises is for some an interesting project: a mild series (red), a more difficult group of exercises (white), an advanced series (blue).

2. An understanding of good body mechanics and the desire to strengthen certain muscles by exercises are of first importance. After the exercises are taught and the students know how to do them correctly, they may be given a mimeographed sheet with stick figures illustrating the exercises learned. This sheet may contain many different exercises for strengthening foot muscles or correction of foot difficulties, kyphosis, lordosis, release of tension and like remedial defects, and the exercises suggested by the physician for a particular student can be checked on the sheet. Since daily practice is desirable, it might be suggested that students post this

list in their bedrooms and devote a short period to daily practice of those exercises designed to overcome their weaknesses.

3. The art of relaxation (instruction in which should have been given in the elementary grades) is based on physiological methods and should be a part of the physical educator's professional equipment. The techniques of relaxation are learned through instruction and practice just as are the skills of tennis and golf. Hypertension is a peculiar but preventable American disease.

Tension or relaxation in the shoulder joint is usually an indication of the same condition in other parts of the body. A simple test can be used for students checking each other. This may prove a good device for motivating students.¹⁷

4. To get students to see themselves as others see them, candid movie shots taken of students in action and when unaware of the photographer are helpful in motivating self-direction after instruction in body mechanics and fundamental movement. Silhouette photographs at the beginning and end of the body mechanics unit are also helpful, chiefly for purposes of motivating rather than of objective evaluation. A teacher's subjective rating of posture is not entirely adequate. Several possible and more adequate techniques are suggested.¹⁸

5. Be aware of environmental factors such as defective school and home lighting, sagging beds, malnutrition, defective hearing or seeing, improper shoes, improper school and home seating, and habits such as sitting or standing on one foot, which place strain in asymmetrical position and have their negative effects on body alignment.

6. Motivation by evidence of improvement and encouragement by the instructor is imperative. Mental attitudes and motor attitudes are correlated. Hence, applied mental hygiene is most important.

7. Body mechanics can and should be related to other school subjects, such as clothing and food units of the home economics department. Likewise, interesting relationships are to be found in both the art and dramatics departments.

8. Body mechanics is not a seasonal activity as are some of the sports units. Students should be motivated to improve their move-

¹⁷ Purdue University Staff Physical Education for Women, Syllabus for Body Mechanics, 1934. See Appendix A.

¹⁸ M. Gladys Scott and Esther French, *Evaluation in Physical Education* (St. Louis: The C. V. Mosby Co., 1930), pp. 223-229.

ment skills in all sports activities. A "fix-it clinic" can be a success, if students are encouraged to come for individual help and guidance in their posture problems.

9. As far as possible, students needing remedial physical education should participate in the regular physical education program with their peers, but since adequate individual guidance is not possible in regular classes, some special classes may have to be formed so that adequate help can be given.

10. Boys and girls at this stage of development are most sensitive to being different and need the strongest motivation and encouragement to develop a mental attitude of self-help toward remediable defects.

One of the major problems of physical education teachers, who, like all teachers, have heavy teaching schedules, is to make special provisions for the 15 or less per cent of the pupils who need special and additional instruction in body mechanics. This is especially true when each individual must have a special prescription.

All boys and girls need to understand what good body alignment, efficient movement, and proper relaxation techniques are, not only for themselves but also for the guidance of their own children in the future.

We have a special responsibility here as our teaching colleagues often remind us as they watch our pupils "sashay," swagger, or walk across the graduation stage in a well-poised gait to accept their diplomas.

ADAPTED PHYSICAL EDUCATION

The fact that physical education is intended to serve all students and not merely those physically capable of participating in any and all activities poses administrative and teaching problems. The health of a child's body should be of as much concern to the school as the education of his intellect.

The term *adapted physical education* was selected by a professional committee, the members of which felt that terms such as *remedial* and *corrective* or *individual* carried some stigma and were not liked by the students so classified in physical education classes.

"Adapted physical education is a diversified program of developmental activities, games, sports, and rhythms, suited to the inter-

ests, capacities, and limitations of students with disabilities who may not safely or successfully engage in unrestricted participation in the vigorous activities of the general physical education program."¹⁹

Rather than excusing pupils, every effort should be made to adapt the program to meet the needs of students. In the case of students unable to participate fully, the development of attitudes of confidence and social security toward participation in certain recreational sports is the major educational goal.

The following principles and methods should be considered:

1. The physician should always determine the physical condition of the student and judge the suitability of the activity offered in terms of this condition. He should be supplied with a standard form indicating the actual types of physical education activities available in the school program and listed under three separate headings, (a) strenuous, (b) moderate, and (c) mild, and requested to check those that he approves for the student in question. A space for approval of the parents might also appear on this form, which should be filed in the school office.

2. All students are entitled to physical education experiences that are adapted to their capacities and limitations and that will lead to optimum development.

3. Feelings of inferiority, frustration, and social rejection are often strong in youth unable to participate fully; therefore, understanding, encouragement, and "building up the ego" become an important task of physical education teachers.

4. The adapted program should be psychologically as well as physically sound. Wherever possible, the handicapped pupils should not be segregated by themselves from the regulars. For example, mix the groups wherever possible as in archery, dart throwing, horseshoe pitching, shuffleboard, swimming, and like activities. Where some of the handicapped are expert in certain skills, such as rope spinning or bait casting, have them teach some of the regular students. Cardiac cases can become excellent square dance callers or give leadership in social-recreational games or table games such as bridge or chess.

5. Maximum growth and development of all students within the limits of their disabilities means special physical education to meet

¹⁹ American Association for Health, Physical Education and Recreation, Committee on Adapted Physical Education, *The Journal*, April 1952, p. 15.

special needs. This involves considerations of students with one limb missing, functional and organic cardiac disturbances, functional and structural foot disorders, hernia, respiratory disturbances, partial vision, and other deviations from the normal.

6. For all students in these categories, try to introduce activities that the disabled may perform as effectively as their classmates.

7. Make special efforts to assure recognition of the handicapped students' successes.

8. Consider some of the following activities and see if they might be introduced:

Areberry	Football passing for accuracy
Badminton	Golf driving and putting
Bait casting	Horseshoe pitching
Bag punching	Newcomb
Basket shooting	Riding horseback
Bowling	Rope climbing
Box bockey	Rope spinning
Cbess	Sailing
Cheekers	Shuffleboard
Clog and tap dancing	Simple swimming water stunts
Croquet	Table tennis
Dart baseball	Tether ball
Volleyball	Quoits

Adolescent boys and girls are notably concerned with the struggle for autonomy and demonstrating their independence. Even for the normal boy and girl, striking an acceptable balance between security on one hand and independence and satisfying modes of self-expression on the other is not a simple problem. For the handicapped student, the problem in achieving and maintaining this balance is much more difficult since he is limited in his ability to cope with many environmental forces that impede progress toward independence. The physical education teacher, as a mental hygienist, will therefore teach motor, social, and other skills that will be highly valued by the student's peers and will provide experiences capable of leading to the development of new interests on the part of the handicapped.

Lastly, as a guidance teacher, he will help pupils develop the

ability to establish worthwhile and suitable goals for themselves and to plan on how these may be achieved.

Discussion

1. Design a set of twelve progressive conditioning exercises adaptable to waltz time, taking no more than ten minutes, and involving all muscle groups important to good posture and conditioning.
2. How would you proceed to get your class properly dispersed on the gymnasium floor for the above?
3. Outline a specific program designed to give your pupils good posture. What are the criteria of good posture?
4. What specific remedial exercises have been suggested by specialists for:
 - a. Round upper back and kyphosis?
 - b. Kypholordosis?
 - c. Lordosis?
 - d. Weak abdominal wall?
 - e. Scoliosis (e.g., a total "C" curve left)?
 - f. Flat and pronated feet?
5. What is the relation of this aspect of the physical education program and the policy and counseling concerning periodic excuses for girls during their menstrual periods?
6. Suggest the kinds of activities that ought to be made available (with approval of the physician) to students classified as follows:
 - a. Cardiacs 1) organic 2) functional.
 - b. Amputees (one arm missing).
 - c. Amputees (one leg missing).
 - d. Polio (legs).
 - e. Inguinal hernia.
 - f. Respiratory disturbance.
7. Make a list of activities that could be used as effective motivators for acquiring and maintaining good body alignment.

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Intramural organization and activities

The relatively brief time that students are active in a physical education class should be used for instruction. The physical education class should be considered something more than a relief or recreation period, although these elements are present in a well-conducted class. The physical education class is the place for conscious planning and control of experiences leading to specific objectives—objectives that are carefully defined.

The intramural program represents a kind of extraclass activity actually taking place on school property and at some time other than the instructional period in physical education. It supplements and complements the instructional program by providing additional opportunity to develop functional skills, increase the number of mutual friendships, provide something worthwhile to do in leisure time, create group loyalty, and provide additional opportunity to extend the development of interests and skills initiated in the regular class period. More specifically, the values of good intramural program are:

1. It encourages the growth of interest in beneficial recreational activities.
2. It permits participation in wholesome competition and at the same time encourages student participation in cooperative planning and team work.
3. It provides the opportunity for practicing good citizenship and fulfillment of the slogan "A team for every boy and girl and every boy and girl on a team."
4. It encourages the development of lasting friendships.
5. It helps secure intelligent followership.
6. It encourages the process of psychological weaning or self-dependence so important to the adolescent.
7. If well administered, it serves to awaken greater interest in the instruction of the regular physical education class.
8. It develops the "give and take" attitude so essential to good sportsmanship.
9. It has potentials for developing fuller cooperation between the home and the school.
10. It has potentials for promoting more successful adjustment to

society through encouraging the development of personality and character.

11. It provides additional informal contacts of teachers and students and hence provides a basis for more effective counseling.

GENERAL PRINCIPLES

1. The direction and supervision of the program should be the responsibility of a physical education teacher who is not, at the time, coaching a specific sport. In a large school where several activities are in progress at the same time, one or more staff assistants are desirable in addition to student assistants.

2. Pupils should share the responsibility in the planning, development, and managing of the program and participate actively in establishing policies, rules, and procedures by representing their fellow students on an intramural council. This implies the development of a constitution or policy and procedures guide.

3. Representation on the council of the grade or home room rather than the individual or team activity serves all interests, prevents bias and favoritism in the direction of one or two favored activities.

4. The intramural program should be based essentially on the physical education program, follow the seasonal instruction in activities taught in the physical education classes.

5. Adequate health examinations, first aid, and routine emergency procedures for care and prevention of injuries should be assumed.

6. The program should be a part of the physical education program and financed by the school authorities with a minimum of student fees from participants.

7. The organizational or competing units should be natural units as far as possible. The home room represents such a unit with considerable social integration—one in which there are some organizational bonds of loyalty, common goals, and mutual understanding.

Physical education class units as bases are also rather natural units for intramural competition; they motivate the class work and result in improved pupil-teacher relations.

If classes are used, the freshmen and sophomores should function in one league, the juniors and seniors in another, in order to decrease the gap in maturity and body structure between the competing teams.

8. Varsity athletes with at least some supervision of a teacher may serve as volunteer coaches of teams.

9. All teams should be equated for competition as far as possible. After the total number of teams to play is determined, the corresponding number of captains may be elected by the entire group. These captains may then get together in the presence of a teacher and choose teams until every boy or girl belongs to a team which selects its own name or color. With rotating choice using the shuttle system (With four captains, the fourth chooser would get two choices in succession and then the third, second, respectively, would each choose one player. The first chooser would select two, and so on), the teams will be fairly equal if the captains know their players well. In all-school events, such as a school track and field day, it is highly desirable, for increased participation and to equalize competition, to classify students in terms of inaturity and body structure by a formula that will permit five or six distinct categories of students for each event.²⁰ Simple and valid schemes for classifying girls are less susceptible to formulization.

10. Students who have passed the practical and written tests on the rules may become eligible for the official's club and serve as intramural officials.

11. The most suitable time for intramural activities is from 3-6 in the afternoon, but noon hours, Saturday mornings, and special sports days are also possibilities.

12. The types of activities should represent a balance between team and individual sports, purely recreational activities, and very active and less active sports. The program should be flexible enough and have variety enough to meet the needs of all from the very active to the restricted student.

13. Although motivation should come from the satisfaction of playing—"sports for sport's sake"—some type of point system for individual and group scoring is often employed. The emphasis is strong on participation but does recognize excellence and penalizes forfeiture under this plan. The following simple system is an example of several used:

²⁰ For boys the McCloy Classification Index ($20 \text{ age} + 6 \text{ height} + \text{weight}$), Charles H. McCloy and Norma D. Young, *Tests and Measurements in Health and Physical Education*. See Appendix K.

<i>Team Competition</i>	<i>Meet Competition</i>
25 points for championship team	6 points any first place
10 points for team winning each contest	4 points any second place
5 points for team losing each contest	3 points any third place
	2 points any fourth place
	5 points participating

Intramural directors feel that such a system motivates the total program, stimulates constant and varied interest and participation in activities, and serves as a sound basis for awards.

14. In the motivation and promotion of the program the following have been found to be helpful:

- a. Colorful and up-to-date bulletin boards in school halls and home rooms.
- b. Intramural handbook.
- c. School and local paper publicity.
- d. Sports clinics

15. The following types of tournaments, described in any book dealing with intramurals, are most commonly used:

- a. *Olympic meet* (One afternoon. Good for track and field, swimming or gymnastics.)
- b. *Straight elimination* (Quickest but emotionally unsatisfactory to those eliminated early.)
- c. *Double elimination* (Gives teams a second chance. Each team plays at least twice.)
- d. *Consolation tournament* (Losers in first round are matched in the second round, the losers of second round play in both brackets are matched in the third round, and play continues until the champion and the winners of the "losers" bracket are determined.)
- e. *League or percentage plan round robin*.
- f. *Ladder* (Each competitor challenges a competitor in a rung above his own. Good for dual activities like tennis, golf, horseshoes.)
- g. *Pyramid* (Names are arranged in rows with one at the top, two in the second row, three in the third and so on. Any player may challenge another player in his row. If he wins he may challenge a player in the row immediately above and if he wins he exchanges places with the loser.)

PROGRAM OF ACTIVITIES

Fewer well-administered activities are better than an over-ambitious program that is poorly administered. Dual and individual sports should be emphasized both in the instructional program of physical education and in the intramurals for 11th and 12th graders rather than in the 7th, 8th, and 9th grades.

Suggested activities for boys

<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Touch football	Basketball	Track and field
Soccer	Swimming	Softball
Speedball	Wrestling	Baseball
Cross-country	Indoor track	Tennis
Swimming	Handball	Archery
Tennis	Volleyball	Horseshoes
Golf	Bowling	Swimming
Six-man football	Apparatus stunts	Golf
Horseshoes	Skating	Badminton
Golf	Water basketball	
	Table tennis	
	Badminton	

Suggested activities for girls

<i>Fall</i>	<i>Winter</i>	<i>Spring</i>
Archery	Volleyball	Softball
Tennis	Tumbling	Tennis
Soccer	Deck tennis	Play day
Speedball	Modern dance	Horseshoes
Horseshoes	(group competition)	Swimming
Fieldball	Badminton	Archery
Deck tennis	Free throwing	Deck tennis
Outdoor volleyball	Ice skating	Paddle tennis
Field hockey	Roller skating	Outdoor volleyball
.	Swimming	Golf
.	Nine-court basketball	Track and field
.	Bowling	

Cocducational intramurals

Volleyball, Table tennis, Badminton, Box hockey, Bowling, Golf, Skating, Bike hikes, Square dancing, Swimming, Horseshoes, Soft-ball, Captain ball.

PHILOSOPHY OF SPORTS FOR GIRLS

The general aims and objectives of sports for girls and women are not fundamentally different from those for boys and men. In fact, the spirit of the slogan of the National Section for Girls' and Women's Sports of the American Association for Health, Physical Education, and Recreation might well be adopted by the boys and meo as well. This slogan states, "The one purpose of athletics for girls and women is the good of those who play."

Sports and games under this code do not emphasize gate receipts, profit, or exhibitionism. Rather, sports and games under this code emphasize the goals of health and education.

The girls' athletic association organization in most states and in most schools gives major attention to the intramural program.

It should be the objective of all concerned to make this program a vital one, in which every girl of the school is interested and in which all are participants. If one major objective of the school is to help students to develop leisure time skills for adult living, it is through the intramural sports program that this must be done. If every girl is to be served, a broad program of activities must be offered. Since the regular class instruction period may not be long enough for adequate instruction it is often necessary to teach basic skills or to include advanced skills in iotramural pretournament schedules.

A great variety of tournaments should be included in the program rather than limiting each activity to an elimination tournament. Ladder and round robin tournaments can in many instances serve a better purpose, for this program should be recreational even though it is usually thought of as a competitive sports program. Students should engage in it voluntarily and the experiences they have should be fun.

The intramural program should not be completely separate from the recreational program. It should include recreatioal activities of a less strenuous nature such as table tennis, deck tennis, and bowl-

ing, and it should be the aim of every teacher to encourage girls to learn and participate in a variety of activities.

Most leaders in physical education do not recommend interschool competition for girls, but they recognize the value and encourage the use of play days in which girls from the several schools play together on the same team, not working for a school championship but rather emphasizing the fun of playing together. Sports days, in which members of the same group play on a team and compete against other homogeneous groups, have value also and perhaps give students a more satisfying experience because they play with a group with whom they have practiced. These two play experiences could well enrich the school intramural program. Both can effectively be used as all school play or sports days.

The girls' athletic or recreation association organization in most states and in most schools gives major attention to the intramural program.

Discussion

1. Draw an organization chart for the administration of an intramural program in a four-year high school of 2,000 students. Indicate the cooperative arrangements between the boys' and girls' departments in intramurals.
2. Draw an organization chart for a consolidated six-year high school of 500 pupils.
3. Suggest the organization of an intramural program for girls under the leadership of the girls' athletic association within the school.
4. Discuss the pros and cons of awards and trophies with respect to their effects on attitudes and carry-over values. How would you answer a student, in whom you are encouraging participation, who asks, "What do I get if I win?"
5. Set up a panel in the class for discussing the merits or demerits of a point system.
6. You teach in a consolidated school in a rural area where 80 per cent of the students go home by bus at 3:30 but have a fairly generous staggered lunch period. Indicate what might be done at noon hour for (a) intramurals and (b) corecreational activities.
7. Draw up and diagram a double elimination tournament for eight teams.
8. Indicate the use of a ladder tournament; a pyramid tournament.
9. How would you set up a round robin tournament so that all teams have an equal waiting period between games?
10. Set up a panel in the class that will come out with specific principles for intramurals under each of the following headings:

- a. Philosophy and objectives.
 - b. Departmental organization.
 - c. Administrative responsibilities.
 - d. Units for competition.
 - e. Methods of equating competition.
 - f. The time for intramurals.
 - g. The program of activities.
 - h. The point system.
 - i. Awards and recognitions.
 - j. Rules and regulations (eligibility, forfeits, and so forth).
 - k. Organization for competition (types of tournaments, and so forth).
11. Draw up a plan for an all-school play day; a sports day.

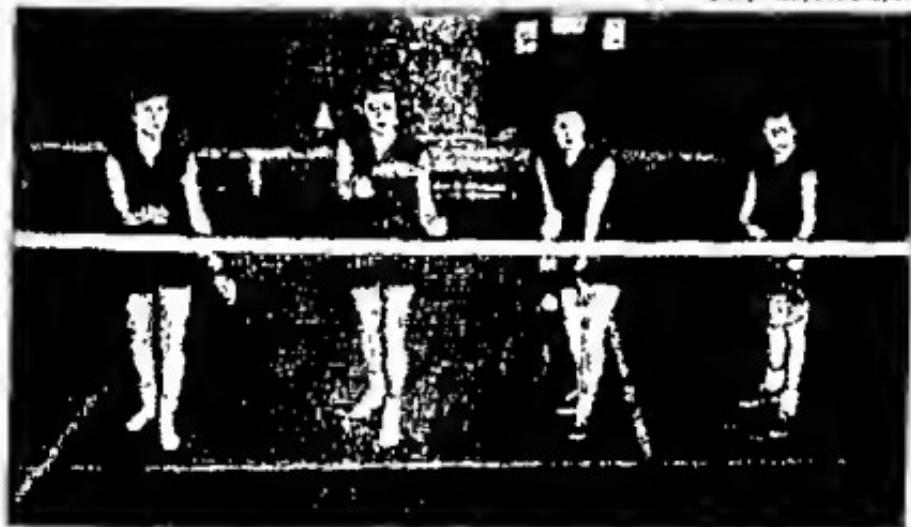
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FOUNDATIONS OF MEASUREMENT AND EVALUATION

Courtesy IUPUIAN, Indianapolis



The importance of the evaluation or appraisal of the work of the school is not always realized. Unfortunately, the customs of the past have given most of us a wrong conception of the purposes of examinations and tests. We think of them as the basis for grading pupils, as the means of determining promotion or failure, but these are not the significant purposes of an adequate testing program. . . . Evaluation is important in the modern school as a means of discovering the points at which individual pupils need assistance. . . . Evaluation is also important as a means of discovering the effectiveness of the school program itself.

—RALPH W. TYLER



Measurement and evaluation in teaching

OBJECTIVES STEM FROM the philosophy underlying the educational program, but unless physical education objectives really make a difference in what we do as teachers their formulation is simply a waste of time. As we change our objectives or values, we develop new skills in teaching. We eliminate the many discrepancies between our physical education objectives and our teaching practices by learning to relate our goals more closely to the methods of reaching them. We cannot mention one goal and attain it by teaching for something else.

You have become a physical education teacher on a high school faculty, the members of which believe that present educational measurements, based on tests that discover how much information pupils can recall and what skill they exhibit in the gymnasium, are no longer adequate. These teachers feel that such limited techniques are not satisfactory means for evaluating the work either in physical education or in the classroom.

The evaluation committee has asked you to list clearly the objectives of your physical education program and suggest means by which you would evaluate the progress of students in the direction of achieving these objectives.

If present measurements do not provide evidence of the degree to which pupils are attaining the goals of good physical education, the tests are not valid means of measuring the results of our teaching. No educational process can be adequately evaluated without evidence based on true educational measurements. For this, we need to improve our tools and techniques by broadening our concept of the nature and purpose of these measurements. For example, we speak continuously about sportsmanship and its importance as an educational objective, but how do we determine the degree to which the social behavior of our students is changing in the direction of better sportsmanship?

Meaning of measurement

Objectives represent the directions in which we seek changes in pupil growth, development, and behavior. Measurement deals with quantity, with the determination of amount, which becomes its principal focus. How much does the pupil know? With how many pounds of pressure can he grip the hand dynamometer? How far or high can he jump? What is his time in the 300-yard run?

Measurement indicates the amount of change with respect to these attributes and is confined to the testing of rather distinct and limited changes with its objective techniques and methods. We measure where we can, appraise and judge where we cannot; but we always strive to measure, realizing that good evaluation depends upon precise and varied measurement superior to any that now exist.

Although it is true that measurements are the raw data for evaluation, the two terms are not synonymous.

Meaning of evaluation

Evaluation has a broader connotation than measurement. As physical education teachers we want to appraise or evaluate the consequences of our teaching efforts. We are interested in the quality of our products (students) and in the nature and direction of the changes taking place within them. These changes encompass a wide range of human activity—actions, achievements, and attitudes

—and not merely the prescribed knowledge that pupils memorize, for education is more than the retention of subject matter.

Evaluation is not interested in segregating parts of the personality for study because a person is more than the test results of an increasing number of abilities. Evaluation is a process of stock-taking. As we see pupils developing in physique, strength, and skill, in social attitudes and emotional maturity, in ideas about themselves and the world around them, we ask in terms of accepted values, "Is this good growth and development?"

*Courtesy West Bend High School,
West Bend, Wisconsin*



Personal growth with physical growth

Appraisal of all outcomes of learning, both quantitative and qualitative, is included in the concept of evaluation. How do we determine the direction of the development of the pupil with respect to

such so-called intangibles as understanding, appreciation, attitudes, social skills, or a sense of values? Still better, let us ask, "What do students do when they get along with their peers? What do students do when they achieve status in the group? How does a student learn to make sound generalizations and draw conclusions from data?"

Evaluation is not based solely on the mastery of subject matter—on knowledge and skill—but on the total growth and development of boys and girls. Personality is not a summation of traits but a life evolving as a whole in which each act is related to some purpose or goal of which the individual may or may not be entirely aware.

If physical education is merely the trade of giving people exercise or the development of a few skills (important as these are) rather than the profession of true education, it hardly justifies its place in the total school curriculum.

Teachers of physical education should help boys and girls map their respective ways in terms of the outcomes of the health examination, the conscious goals and purposes of the student, their strength, skill, and organic fitness, their personality needs, and any other information available. The evaluation of physical education practices must be in terms of their effects.

Does it seem absurd of the physical education teacher to be asking the pupil, "What does the present situation mean to you in terms of your desires and hopes for the future? What are your long-range motives or purposes and goals in life?"

Measurement involves the collection, recording, and interpretation of certain quantitative data, such as blood pressure, basal metabolism, weight, dynamic strength, reaction time, and the like. It reveals how much the pupil has changed, how skillful he has become, how much he has learned. These measurements are the raw data for evaluating or appraising the quality of change in individuals. Quality implies a value judgment (excellent, good, fair, or poor) about the development of certain characteristics of individual students as well as a value judgment about ways in which we might manipulate the organization of learning experiences designed to meet the special needs of these individuals.

Human personality is exceedingly complex. Our task is not an easy one. Evaluation provides guidance and direction in making

choices, in planning procedures, and in determining the nature of what should be the next step.

A person reasons with data (facts or principles upon which inferences are based). We now turn to the possible sources of data for better evaluation and guidance, the ultimate function of which is the development of the student's own capacity for self-judgment and self-guidance.

Suggested tools for evaluation

For evaluation, tools, techniques, or instruments are needed. These range from standardized tests to subjective judgments. Naturally, the nature of the stock-taking device or measuring rod will depend upon what we are trying to measure, appraise, or judge. Parents, pupils, taxpayers, and school administrators should insist upon results from a physical education program. To indicate results, some means of measuring the change in the status of pupils is imperative. Sometimes physical education programs are difficult to sell because the claims are difficult to prove.

We shall consider, in turn, the possibilities of evaluating the achievements of our previously stated objectives.¹

ORGANIC POWER

Strength, endurance, cardiovascular efficiency, or general physical fitness in students is a fundamental goal for all physical education teachers. Actually, the most fundamental evaluation instrument in this category is an adequate health examination, preferably by the family physician of the student. Another means of evaluation is an appraisal of a student's maturity and body structure in the form of classification tests for grouping students so that learning will be facilitated and that the attainable goals will be held before all students regardless of body type and maturity. Achievement scales based on these classifications develop interest in participation and motivate students toward individual and group effort and improvement. If the scales are equated (50 points in the scale in any event is the average for that classification in that particular event) it is possible for the student and teacher to see readily his strengths and

¹ See pages 16-17.

Courtesy Norfolk City Schools



The most fundamental evaluation

weaknesses—good in arm strength, poor in endurance, or fair in skill.

CLASSIFYING BOYS FOR ACHIEVEMENT TESTS. Maturity and body structure are factors in which boys must be equated for achievement tests involving norms. One such scheme involves the following procedures:

1. The boy's age is determined in years and months to the nearest month.
2. His height is determined to the nearest half inch.
3. His weight is determined to the nearest pound.
4. After these measurements are secured, refer to the table of classification, e.g.,
5. A boy's age is 14 years and 10 months, his height is $61\frac{1}{4}$ inches, and his weight 136 pounds.
6. The exponent for 14 years 10 months is 30. The exponent for $61\frac{1}{4}$ is 29, and the exponent for 136 pounds is 22. These ex-

ponents, 30, 29, and 22, total 81. We find from the table that the boy is in Class C and is expected to meet the standards listed for his class.²

For administrative convenience classifying all boys at the beginning of the school year is of tremendous assistance when intramural indoor and outdoor field days, gymnastic meets, and other forms of competition are held. Knowing his classification, the student knows what events are open to his classification and fills out the entry blanks accordingly. Under such a scheme boys of equal maturity and body structure compete against each other or test themselves against norms for their classification.

Classification plan for secondary school boys³

Exponent	Age	Height	Weight	Exponent	Age	Height	Weight
9.....			53- 59	24.....	11:9-12:2	49½-51½	147-153
10.....			60- 65	25.....	12:3-12:8	52-53½	154-159
11.....			66- 71	26.....	12:9-13:2	54-55½	160-165
12.....			72- 78	27.....	13:3-13:8	56-57½	166-171
13.....			79- 84	28.....	13:9-14:2	58-59½	172-178
14.....			85- 90	29.....	14:3-14:8	60-62	179-184
15.....			91- 96	30.....	14:9-15:2	62½-64	185-190
16.....			97-103	31.....	15:3-15:8	64½-66	191 up
17.....			104-109	32.....	15:9-18:2	68½-68	
18.....			110-115	33.....	16:3-16:8	68½-70½	
19.....			116-121	34.....	16:9-17:2	71-72½	
20.....			122-128	35.....	17:3-17:8	73-74½	
21.....			129-134	36.....	17:9-18:2	75 up	
22.....	10:9-11:2	47 down	135-140	37.....	18:3-18:8		
23.....	11:3-11:8	47½-49	141-146	38.....	18:9-19:2		

Grades 7 to 12, inclusive.

For purposes of competition in interschool athletics and in individual events—derived from the formula $2A$ (years) + .475 H (inches) + .16 W (lbs.).

Note: Height is measured in half-inches. The boy must have attained the height listed before the exponent value changes. For example, he remains at 49 until he reaches 49½.

² Adapted from Frederick W. Cozens, Martin Trieb, and N. P. Neilson, *Physical Education Achievement Scales for Boys in Secondary Schools* (New York: A. S. Barnes and Company, 1936), now available from Martin H. Trieb, 330 S. Mansfield Ave., Los Angeles 36, California.

³ *Ibid.*, p. 13.

<i>Class</i>	<i>Exponent values (sum of exponents)</i>
F	69 and below
E	70-74
D	75-78
C	79-82
B	83-87
A	88 and over

The sample individual score card for a decathlon (ten events) indicates a selection of events involving testing the following muscle groups:

1. Arm and shoulder girdle
2. Abdomen and back
3. Legs

It also permits recording at three different intervals in order to appraise student progress.

The table of standards for boys on pages 218-219 is of considerable value because it:

1. Motivates participation and performance.
2. Makes for more just and adequate evaluation of individual and group performance.
3. Permits selection of events suitable to students' needs, interests, and capacities.
4. Makes for safety and more effective teaching in that it equates boys for individual and team competition and encourages self-testing in competition with one's past record.

Cozens, Trieb, and Neilson* also serve as a source for scoring norms for six different classifications of boys for a total of thirty-two events. Since these are all equated in terms of comparable scores, the student and teacher may easily graph the relative strengths and weaknesses of the performer. This makes self-appraisal possible. Directions for all 32 events with the achievement scales may be found in the volume indicated. Directions for the events indicated in the standards for either boys or girls may be found in the source.

* *Ibid.*

Sample individual record card

Name _____				Date of birth _____		
School _____				City _____		
Test	1		2		3	
Record-exponent	R	Exp.	R	Exp.	R	Exp.
Age	15-2	30				
Height	67	32				
Weight	143	23				
Sum of exponents		85				
Class	B					
Date of test						
Events	Rec.	Score	r	Rec.	Score	r
1. Push-ups	14	36	F			
2. Pull-ups	9	52	G			
3. Bar vault	5-6	73	G			
4. Sit-ups		64				
5. Hanging half-lever		72				
6. Bank twist		64				
7. Potato race	22.2	85	E			
8. Standing broad jump	8-1	73	E			
9. 100-yard dash	11.2	82	E			
10. 440-yard run	60.4	78	E			
Total score		699				
Average score		69.9				

Table of standards for boys

Rating by class	XVIII. No standards available									
	XVII. 400-yard run									
A	XVI. 100-yard dash									
	XV. Running high jump									
B	XIV. Running broad jump									
	XIII. Standing broad jump									
C	XII. Jump and reach									
	XI. Potato race									
	X. Bar result									
	IX. Rope climb 20									
	VII. Rope climb 15									
	III. Dip parallel bars									
	II. Pull-ups									
	I. Push-ups									
XVII. 400-yard run										
XVI. 100-yard dash										
XV. Running high jump										
XIV. Running broad jump										
XIII. Standing broad jump										
XII. Jump and reach										
XI. Potato race										
X. Bar result										
IX. Rope climb 20										
VII. Rope climb 15										
III. Dip parallel bars										
II. Pull-ups										
I. Push-ups										

	Superior	39	17	14	5.0	8.0	5-5	22.8	20.5	8-2	10-10	5-0	11.5	60.3	.....
D	Excellent	30	13	10	6.9	11.4	4-11	24.7	18	7-65	1-5-2	4-7	12.2	65.1	.....
	Good	15	6	3	10.0	15.6	4-1	27.8	13.5	6-0	12-1	4-0	13.3	73.3	.....
	Fair	8	2	0	14.9	10.8	3-3	30.9	9.5	5-5%	0-6	3-4	14.4	81.4	.....
	Poor	4	0	0	17.8	22.3	2-9	32.	7	4-10	7-10	6-0	15.1	66.3	.....
	Superior	38	16	12	5.2	0.2	5-3	23.2	20	8-05	10-0	4-10	11.9	02.4	.....
E	Excellent	29	12	5	7.2	11.9	4-0	25.1	17.5	7-5	1-1-5	4-5	12.8	67.3	.....
	Good	14	5	1	10.7	16.2	3-1	26.2	13	6-15	1-1-9	3-10	13.7	75.4	.....
	Fair	7	1	0	15.8	20.6	3-1	31.4	0	5-1	9-1	3-2	14.0	63.5	.....
	Poor	3	0	0	18.0	23.2	2-7	31.2	8.5	4-8%	7-8	2-10	15.5	88.4	.....
	Superior	38	14	10	5.4	9.8	5-0	23.5	19.5	7-11	15-3	4-8	12.5	04.5	.....
F	Excellent	29	10	4	7.0	12.5	4-9	25.4	17	7-9%	1-2-9	4-3	13.2	69.4	.....
	Good	14	4	0	11.3	17.0	3-8	26.5	12.5	6-3	1-1-7	3-8	14.3	77.5	.....
	Fair	7	0	0	16.7	21.5	2-10	31.7	8.5	5-2%	8-9	3-0	15.5	85.7	.....
	Poor	3	0	0	18.9	24.2	2-4	33.5	0	4-7	7-3	2-8	16.1	00.5	.....

ACHIEVEMENT STANDARDS FOR GIRLS. Classification schemes and achievement scales for girls are on a less scientific basis. The following table of standards represents available evidence of satisfactory performance that may motivate students and guide teachers to increase gradually the intensity and duration of activity in order to develop both muscular and cardio-respiratory endurance.

Table of standards for girls' tests³

Rating	Jump and reach	Potato Race	Soccer throw-in	10-yard free style	20-yard free style
Superior	15 $\frac{1}{2}$ " or more	23.3 or less	48' or more	25.9 or less	11.5 or less
Excellent	16" to 16 $\frac{1}{2}$ "	23.2 to 25.4	47' to 42'	28 to 31.2	11.6 to 13.9
Good	16" to 9"	25.3 to 32.2	41' to 24'	31.3 to 47.9	14.0 to 21.8
Fair	8 $\frac{1}{2}"$ to 7 $\frac{1}{2}"$	32.1 to 34.0	23' to 19'	48 to 52.9	21.7 to 23.9
Poor	6 $\frac{1}{2}"$ or less	34.1 or more	18' or less	53 or more	24 or more

A.A.U. JUNIOR PHYSICAL FITNESS AND PROFICIENCY TESTS. In order to provide incentives for boys and girls to improve their physical condition and to challenge them to greater motor proficiency, the Amateur Athletic Union of the United States has established certain standards of achievement and has made available certificates of achievement for successfully passing six events in the proper age group. The A.A.U. states that "Physical fitness tests will not in themselves make a boy or girl physically fit, but they will provide the incentive and the challenge to them to improve their physical condition once they have the courage to match themselves against the standards and are brought face to face with their shortcomings."

These tests rightfully acknowledge the fact that cardio-respiratory endurance cannot be built in youth without applying the principle of overload, represented here by the distance work in the continuous bike for distance or the walk and run.

³ United States Office of Education, *Physical Fitness Through the Victory Corps*. Washington, D. C.: Government Printing Office, 1942.

STANDARDS FOR A.A.U. JUNIOR PHYSICAL FITNESS TESTS

Events numbered 1 to 5 are required; select one additional from numbers 6, 7, 8, and 9

BOYS

REQUIRED EVENTS	Age group 6-7 years	Age group 8-9 years	Age group 10-11 years	Age group 12-13 years	Age group 14-15 years	Age group 16-18 years
1. SPRINTS	40 yards 9 seconds	40 yards 8 seconds	50 yards 8 seconds	60 yards 9 seconds	100 yards 14 seconds	100 yards 12.5 seconds
2. WALK AND RUN	$\frac{1}{8}$ mile 5 minutes	$\frac{1}{8}$ mile 8 minutes	$\frac{1}{4}$ mile 10 minutes	1 mile 11 minutes	1½ miles 15 minutes	1½ miles 15 minutes
3. SIT-UPS	8 times	12 times	16 times	20 times	25 times	30 times
4. PUSH-UPS	(Modified) 3 times	(Modified) 7 times	(Regular) 3 times	(Regular) 5 times	(Regular) 6 times	(Irregular) 7 times
5. STANDING LONG JUMP	3 feet	4 feet	5 feet	5 ft. 6 in.	6 feet	7 feet
CHOOSE ANY ONE OF THESE EVENTS						
6. PUSH-UPS	(Modified) 5 times	(Modified) 8 times	(Modified) 13 times	(Irregular) 10 times	(Regular) 12 times	(Irregular) 15 times
7. BASEBALL TINNOW (12-inch Circumference Official Play-ground Ball)	35 feet	65 feet	85 feet	100 feet	125 feet	150 feet
8. CONTINUOUS WALK FOR DISTANCE	1 mile	2 miles	3 miles	4 miles	5 miles	6 miles
9. RUNNING HIGH JUMP	1 ft. 6 in.	2 ft. 3 in.	2 ft. 9 in.	3 ft. 3 in.	3 ft. 9 in.	4 feet

STANDARDS FOR A.A.U. JUNIOR PHYSICAL FITNESS TESTS
Events numbered 1 to 5 are required; select one additional from numbers 6, 7, 8, and 9

GIRLS

REQUIRED EVENTS	Age group 6-7 years	Age group 8-9 years	Age group 10-11 years	Age group 12-13 years	Age group 14-15 years	Age group 16-18 years
1. SPRINTS	40 yards 9 seconds	40 yards 8 seconds	50 yards 9 seconds	60 yards 10 seconds	100 yards 17 seconds	100 yards 16 seconds
2. WALK AND RUN	$\frac{1}{2}$ mile 5 minutes	$\frac{1}{2}$ mile 6 minutes	$\frac{3}{4}$ mile 11 minutes	1 mile 13 minutes	1½ miles 19 minutes	1½ miles 17 minutes
3. SIT-UPS	8 times	12 times	14 times	16 times	18 times	20 times
4. FULL-UPS	(Modified) 3 times	(Modified) 7 times	(Modified) 8 times	(Modified) 9 times	(Modified) 10 times	(Modified) 12 times
5. STANDING WIDE-LEG JUMP	3 feet	4 feet	4 ft. 6 in.	5 feet	5 ft. 6 in.	6 feet
CHOOSE ANY ONE OF THESE EVENTS						
6. PUSH-UPS	(Modified) 4 times	(Modified) 7 times	(Modified) 9 times	(Modified) 10 times	(Modified) 12 times	(Modified) 14 times
7. BASEBALL THROW (12-inch Circumference Official Play-ground Ball)	20 feet	30 feet	40 feet	50 feet	75 feet	100 feet
8. CONTINUOUS HIKE FOR DISTANCE	1 mile	2 miles	3 miles	4 miles	5 miles	6 miles
9. RUNNING HIGH JUMP	1 ft. 6 in.	2 ft. 3 in.	2 ft. 6 in.	2 ft. 9 in.	3 feet	3 ft. 3 in.

DESCRIPTION OF EVENTS**SPRINTS**

Use erouch start. No other specifications.

WALK AND RUN

Use standing start. Start the event by running. The running may be interspersed with periods of walking.

STURS

Lie flat on back on the floor or ground. Hands should be clasped together behind the head with elbows spread out to side. Support ankles under desk, dresser, bed or have a partner hold them down. Raise trunk to sitting position and lean forward touching right elbow to left knee and return to backlying position. Sit up and touch left elbow to right knee.

PULL UPS

Regular: Using either grasp (palms facing you or palms away from you), hang from bands on a high horizontal bar or limb of a tree so that body is vertical and the extended toes not touching the floor or ground. By bending the elbows raise body until upper part of chest touches the bar or the chin is raised above the bar. Relax arms and lower body until arms are fully extended before "chinning" the bar. Repeat until limit is reached. No kicking of legs or swinging of body while chinning.

Modified: Hang (elbows straight) by hands (either grasp) from low horizontal bar (or stick resting on backs of two chairs and steadied by two assistants) so that chin is directly under bar, body parallel to the ground, knees bent and feet flat on ground directly under knees. Pull body up by bending arms until upper part of chest touches the bar or stick. Keep the feet on the same spot on the ground during the pull-up. Lower body until arms are straight and repeat till limit is reached.

STANDING BROAD JUMP

The feet may be placed in any position but shall leave the ground only once in making an attempt to jump. Rocking forward and backward, that is, lifting heels and toes alternately from the ground, is permitted, but both feet must

DESCRIPTION OF EVENTS (Continued)

STANDING WIDE JUMP (Continued) Measurement is made from the mark of the toes at the starting position to the ground at the same time. Measurement is made from the mark of the toes at the starting position to the nearest break in the ground made by any part of the body at the completion of the jump.

RUNS-UPS

Regular: From prone lying position (face down), elbows bent and hands placed on floor (thumbs next to chest), push body up until arms are straight with weight of body resting on hands and tocs, keeping heels, hips, shoulders and head all in same straight line. Relax arms and lower straight body to floor. Repeat this "push-up" continuously as many times as possible.

Modified: From position on hands and knees on floor or ground (thighs at right angles to floor, trunk parallel to floor and elbows straight), bend elbows and touch chest to floor. Extend elbows and push up to starting position. Repeat the modified "push-up" continuously as many times as possible.

FLAMBOYANT BASEBALL THROW

The throw shall be made from behind a line, properly marked, and measured from that line to the nearest mark made by the fall of the ball. An unlimited run is permitted, but the thrower must not cross the line in making the throw. It is recommended that the distances of 35, 65, 85, 100 and 125 feet for boys and 20, 30, 40, 50 and 75 feet for girls be measured from the throwing line and marked to eliminate the necessity of measuring each throw.

CONTINUOUS MILE FOR DISTANCE

The only specification for this event is that the hike be continuous. Distances can be established by automobile speedometers in scenic or other areas in or out of the community.

RUNNING HIGH JUMP

The jump shall be made over a bar resting on supports in such a manner that it can easily be displaced. The length of the run is unlimited. The take-off for the jump must be made from one foot. The take-off ground about the jump must be level.

PENTATHLON SCORING CHART FOR HIGH SCHOOL BOYS. The problem of encouraging vigorous organic activity in the gymnasium to meet physiological needs and at the same time to provide challenge and hold psychological interest is somewhat difficult when one has numbers and limited space. Krackower faced this problem in a large three-year New York high school, which enrolled only students of superior scholastic achievement. The average age of these students upon graduation was 15+ years. In general, they were below average in physical ability and strength.⁶

The pentathlon served a two-fold function:

1. It was an intramural athletic event in which the highest scores of the first ten (or any number desired) in each category were added for a team score.
2. It was a means of classification.

The categories were weight categories as follows:

110 pounds and under
111-125 pounds
over 125 pounds

The rules were few and simple:

1. Potato race—3 blocks, to be run against time (70 yards). Three small wooden blocks are placed on the floor five yards apart in a line. A box is placed five yards from the starting line and five yards from the first block. At the signal, the runner recovers each block, one at a time, and places it in the box. After placing the last block in the box, he returns to the starting line. All blocks must remain in the box to count.
2. 30-second basketball—first shot from the foul line, next from any place on the floor. Object: to make as many baskets as possible in 30 seconds.
3. Standing broad jump—two tries, count best jump.
4. 20-yard dash—against time.
5. Pull-ups—from horizontal bar. Overhand grasp. Start with straight-arm hand. Pull up until chin is over bar. Keep legs straight, do not swing body. Return to straight hang after each pull-up.

⁶ Hyman Krackower, "A Pentathlon Scoring Chart Based on 10,650 Cases," *Research Quarterly*, May 1943, p. 217.

The following scale and rules for conducting intramural and individual competition may be used as a basis for further experimentation and for providing tentative standards from which one can develop his own scales based on similar age and weight groups. The fact that it was based on such a large number of cases makes its norms exceedingly valid for the group for which it was intended. By the "lower" school, the author refers to the tenth grade.

- Each contestant must compete in all five (5) events, the same period, in the order listed on the scoring sheet.

6. Scoring:

- The scoring shall be on a point score basis and the scoring table will be posted on the gymnasium bulletin board.
- The points scored by each individual will be compiled after the contest is closed. Each class should endeavor to have as large an entry as possible.
- After scores are compiled, the scores of the fifteen (15) contestants who have the highest marks in each class are added together to obtain the class score.
- In addition to the scores of the highest fifteen contestants in each class, points will be awarded equal to the percentage of the class that took part in the contest and completed all five events (i.e., if 85 per cent of the total class participates in the five events, 85 points will be added to the total scored by the fifteen high scorers in that class, and the grand total shall be the *Official Class Score*).

7. Awards, or winners:

The winners will be the five highest scorers in each weight division of the upper school, and the three highest scorers in each weight division of the lower school. The variation in the total of winners is made because of the difference in the total number of competitors in the lower and upper school, approximately 2 to 1 ratio.

SCORING CHART

As indicated previously, the scoring chart was formulated on an accumulated total of 10,650 cases in each of the five events.

To insure a total with values from 0 to 100 per cent, the formula $\frac{6 \times S.D.}{100}$ was used.

SCORING CHART
(Based on 10,650 cases)

EVENTS

Per cent	Potato race (70 yards)	30 second basketball goals	Standing broad jump (inches)	Dash (seconds-tenths)	Pull-ups (over grasp)
100	12.5	17	103	2.7	13
99	12.6		107		
98	12.7		100	2.8	
97	12.8				
96	12.9	16	105		12
95	13.0				
94	13.1		104		
93	13.2		103	2.9	
92	13.3	15			
91	13.4		102		11
90	13.5		101		
89	13.6				
88	13.7		100	3.0	
87	13.8		99		
86	13.9	14			10
85	14.0		98		
84	14.1		97		
83	14.2		96	3.1	
82	14.3				9
81	14.4				
80	14.5	13	95		
79	14.6		94		
78	14.7			3.2	
77	14.8		93		
76	14.9	12	92		8
75	15.0				
74	15.1		91		
73	15.2		90	3.3	
72	15.3	11			
71	15.4		89		
70	15.5				7
69	15.6		88		
68	15.7		87	3.4	
67	15.8				

SCORING CHART
(Based on 10,650 cases)

EVENTS

Per cent	Potato race (76 yards)	30 second basketball goals	Standing broad jump (inches)	Dash (seconds-tenths)	Pull-ups (over grasp)
68	15.9	10	88		
65	16.0		85		
64	16.1				6
63	16.2		84	3.5	
62	16.3	9	83		
61	16.4				5
60	16.5		82		
59	16.6		81		
58	16.7			3.6	
57	16.8		80		
56	16.9	8	79		
55	17.6				
54	17.1		78		4
53	17.2			3.7	
52	17.3		77		
51	17.4		76		
50	17.5	7			
49	17.8		75		
48	17.7		74	3.6	3
47	17.8				
46	17.9	6	73		
45	18.0		72		
44	18.1		71		
43	18.2			3.9	
42	18.3	5	70		
41	18.4				2
40	18.5		69		
39	18.6		68		
38	18.7			4.0	1
37	18.8		67		
36	18.9	4			
35	19.0		66		
34	19.1		65		
33	19.2			4.1	

SCORING CHART
(Based on 10,650 cases)

EVENTS

Per cent	Potato race (70 yards)	30 second basketball goals	Standing broad jump (inches)	Dash (seconds-tenths)	Pull-ups (over grasp)
32	19.3		64		
31	19.4		63		
30	19.5	3			
29	19.6		62		
28	19.7			4.2	
27	19.8		61		
26	19.9	2	60		
25	20.0				
24	20.1		59		
23	20.2		58	4.3	
22	20.3	1			
21	20.4		57		
20	20.5				
19	20.6		56		
18	20.7		55	4.4	
17	20.8				
16	20.9		54		
15	21.0		53		
14	21.1				
13	21.2		52	4.5	
12	21.3		51		
11	21.4				
10	21.5		50		
9	21.6		49		
8	21.7			4.0	
7	21.8		48		
6	21.9				
5	22.0		47		
4	22.1		46		
3	22.2			4.7	
2	22.3		45		
1	22.4		44	4.8	
0	22.5	0	43	4.9	0
Frequency	10650	10650	10650	10650	10650
Mean	17.46	0.79	75.24	3.72	3.38
S. D. (σ)	1.61	3.34	10.71	0.31	3.03

STRENGTH TESTS FOR HIGH SCHOOL BOYS. As one would expect, the relationship between general athletic ability and strength in boys is high.

Where objective strength scores are desired and where boys are equated for maturity and body structure by the McCloy Classification Index, the Larson Dynamic Strength Test may be employed and the results recorded and evaluated in terms of Bookwalter's tables for the combined use of these two evaluation instruments.⁷

The McCloy Pull-up Strength Score may be divided by the norm for strength according to age and weight and multiplied by 100 to give a pull-up strength quotient, with a score of 100 always being average. Hence, the score above or below the average indicates the per cent of better or worse than the average for age and weight.

For building strength, exercises applying the overload principle, in which the muscles are contracted forcefully, are important. Exercises with weights, pushing, pulling, and lifting objects close to the limits of one's strength are exercises that build strength.

STRENGTH TESTS FOR HIGH SCHOOL GIRLS. No adequate and easily employed norms are available for high school girls. Although strength is exceedingly important, in girls it is only a moderately significant factor in athletic performance ($r = .55$), according to Anderson, who feels that such factors as body build, relative fatness, and other elements weaken the relationship between total strength and athletic ability in girls.⁸

NEUROMUSCULAR DEVELOPMENT

The development of game and sports skills is one of our chief stocks in trade. Grace in movement, a sense of rhythm, and reaction time are likewise subject to improvement by physical education. Evaluation involves consideration of both quantity and quality of the degrees of change in these respects.

In baseball, we have batting, fielding, and earned-run averages to evaluate batting, fielding, and pitching. We have agility tests and basketball skill analysis charts for observing and recording the frequency and the types of errors and successes in order to help the teacher determine how successfully individuals have mastered skills

⁷ See Appendix E and F.

⁸ Theresa N. Anderson, "Weighted Strength Tests for the Prediction of Athletic Ability in High School Girls," *Research Quarterly*, March 1936, pp. 136-142.

and what should be done in future instruction and practice. We have good tests for tennis, archery, badminton, swimming, and other sports abilities.

One thing, however, must be remembered. A game is something more than a summation of separate skills. Therefore, we have no adequate tests for selecting our basketball, football, or hockey squads with certainty. The reason is that human personality is complex. We are as yet unable to measure some of the most important variables that make the *superior performer*. Persistence, the will to win, aggressiveness, and the ability to endure discomfort are important variables that are not taken into account in our statistical formulas. Napoleon implied this when he discussed the morale of an army (we might think in terms of an athletic squad!) and said "The mental is to the physical as three is to one."

As yet we do not know the exact changes that these mental-emotional attitudes make in the bio-chemical and physiological states of the organism. This is a research goal.

RATING HIGH SCHOOL FOOTBALL PLAYERS. Although rating scales are somewhat unreliable from the standpoint of accuracy and consistency of measurement, they have a definite place in the evaluation program. Ratings of behavior based on extended, objective observation of individuals in real life situations have considerably more validity and reliability than was once thought, because such behavior ratings supply data close to real life situations.

Ratings by teachers, ratings of students by one another, and self-ratings are valuable because they direct the attention to specific criteria, let us say, for desirable social adjustment, good football playing, or sportsmanship. The use of rating scales influences both the rater and the ratee by focusing attention on important aspects of behavior and should stimulate the desire to improve. This is especially true in self-rating and where ratings are tactfully discussed with the student.

Hardy adapted a rating scale designed to evaluate football ability and attitude.⁹ He found rating each boy on the squad by every other squad member resulted in total scores that correlated .86 with the ratings of the players by the coaches. Using the same scale,

⁹ David H. Hardy, "A Study of Certain Personality Components Related to Success in High School Football" (Unpublished Master's thesis, Purdue University, 1951). See Appendix G.

Trapp found a coefficient of correlation of .824 between the players' and the coaches' ratings.¹⁸

Scales such as this are valuable aids to teaching and learning, as has been suggested.

CLASSIFYING BOYS IN FUNDAMENTAL MOTOR SKILLS. There are a number of schemes purporting to classify boys into homogeneous groups for physical education and athletic competition. It seems logical, first of all, to classify them by maturity and body structure. Either the McCloy Classification Index or the California Classification Index does this well for secondary school boys.

Since the California Index has been previously described, we assume that boys have been classified into one of six classes by this device. It is now suggested by the authors that performance tests in the following fundamental motor skills be used:

1. Basketball throw for goal (number of baskets in one minute).
2. Jump and reach.
3. Playground baseball throw for distance (12 inch ball).
4. 50-yard dash or potato race.

Rules for administering these events and achievement scales for all six classifications are given by Cozens, Trich, and Neilson. Since the outseam ball is no longer available, however, and since the norms are based on such a ball, to use the norms it is desirable to subtract ten feet from each actual throw because of the wind resistance to the outseam ball. Eventually norms for the smooth ball will be established.

If boys in a given secondary school are first classified for maturity and body structure by the California Index and then given the four-item performance test with each item scored separately according to class and achievement scale scores and the four scores added, the teacher will have a satisfactory classification device for physical education and athletics as well as a motor achievement test. All boys in the school may be listed (though not publicly) in rank order.

With every boy in school given an index, individual and group improvement may be readily evaluated and boys quickly placed in instructional groups or squads for physical education or for athletic competition.

¹⁸ William G. Trapp (*Unpublished research project, Purdue University, 1953*).

Rating categories for the total scores on the four events in terms of achievement scale scores for each item by class are approximately as follows:

Excellent	Above 284
Good	238 - 284
Average	165 - 237
Poor	117 - 164
Very poor	Below 116

In order to interpret and record any of the above results on the 60-scale suggested for the cumulative record in Chapter X, the total scores must be divided by four.

Motor skill tests

It is important to remember that while people are learning skills they are also developing attitudes, appreciations, ideals, and other concomitant learnings of high social significance. Hence, the testing of isolated skills gives us a rather incomplete picture of the person or his ability to play the game as a whole. A sampling of such tests follows. Although some will need to be revised in terms of rule changes and local conditions, they will form a good basis for such revision.

1. Bennett, La Verne M., "A Test of Diving for Use in Beginning Classes," *Research Quarterly*, March 1942, pp. 109-115.
2. Benton, Rachel J., "The Measurement of Capacities for Learning Dance Movement Techniques," *Research Quarterly*, May 1944, 15: 137-144.
3. Brace, D. K., "Validity of Football Achievement Tests as a Measure of Motor Learning and as a Partial Basis for the Selection of Players," *Research Quarterly*, December 1943, pp. 373-377.
4. Cozens, F. W., Cubberly, Hazel J., and Neilson, N. P., *Achievement Scales in Physical Education Activities for Secondary School Girls and College Women* (New York: A. S. Barnes & Company, 1937).
5. Cureton, T. K., *How to Teach Swimming and Diving* (New York: Association Press, 1934).
6. Dyer, Joanna T., "Revisions of the Backboard Test of Tennis Ability," *Research Quarterly*, March 1938, pp. 25-31.
7. French, Esther, and Cooper, Bernice, "Achievement Tests in Volleyball for High School Girls," *Research Quarterly*, May 1937, pp. 150-158.
8. Heath, Marjorie L., and Rodgers, Elizabeth G., "A Study in the Use of Knowledge and Skill Tests in Soccer," *Research Quarterly*, December 1932, pp. 33-53.
9. Hyde, Edith I., "Achievement Scales in Archery for Women," *Research Quarterly*, May 1937, pp. 109-116.

10. Lamp, Nancy A., "Volleyball Skills of Junior High School Students as a Function of Physical Size and Maturity," *Research Quarterly*, May 1934, pp. 189-200.
11. Lockhart, Arlene, and McPherson, Frances A., "The Development of a Test of Badminton Playing Ability," *Research Quarterly*, December 1949, pp. 402-405.
12. Russell, Naomi, and Lange, Elizabeth, "Achievement Tests in Volleyball for Junior High School Girls," *Research Quarterly*, December 1940, pp. 33-41.
13. Scott, Gladys M., "Achievement Examination in Badminton," *Research Quarterly*, May 1941, pp. 242-250.
14. Schwartz, Helen, "Knowledge and Achievement Tests in Girls' Basketball on the Senior High School Level," *Research Quarterly*, March 1937, pp. 143-156.
15. Vanderhoof, Mildred, "Soccer Skill Tests," *Journal of Health and Physical Education*, October 1932, pp. 42, 54-56.
16. Voltmer, E. F., and Watts, Ted, "A Rating Scale for Player Performance in Basketball," *Journal of Health and Physical Education*, February 1940, pp. 94-95, 123-125.
17. Wagner, Miriam M., "An Objective Method of Grading Beginners in Tennis," *Journal of Health and Physical Education*, March 1935, pp. 24-25, 79.
18. Wettstone, Eugene, "Tests for Predicting Potential Ability in Gymnastics and Tumbling," *Research Quarterly*, December 1938, pp. 115-127.

PERSONAL-SOCIAL ATTITUDES AND ADJUSTMENT

Praetically every facet of the student's personality is open to the physical education teacher for inspection, study, and diagnostic and remedial teaching. The old saying, "If you want to know a person, play a game with him," contains a good deal of truth.

Interrelationships between physical, emotional, and social aspects of development in children and youth and the interweaving of their deviations are two of the astounding discoveries of recent research. Motor skill plays an important role in social development. Many of the desirable and undesirable mental and emotional personality attributes are developed by participation in play and games. The direction of development depends upon the quality of educational leadership and the total situation in which the activity takes place.

Attitudes are powerful directional forces for human behavior. They represent how the student feels about something. Knowledge and skill determine what we can do. Attitudes determine what we will do. An attitude is a mental set. When we build positive mental attitudes we orient boys and girls in the direction of responding in an educationally desired manner.

PERSONAL ATTITUDES. Although care should be taken in interpreting attitudes from written responses to printed statements, improved techniques and instructions have greatly increased their validity. We want students to have a good attitude toward physical education, for with the proper attitude and interest they will participate more fully and consequently receive more of the educational benefits we cherish for them.

Wear, using the Likert technique, developed an instrument for evaluating attitudes toward physical education as an activity course.¹¹ Two equivalent forms are available. These are useful in determining attitude changes resulting from planned education experiences such as taking a semester or more of physical education instruction, watching a demonstration, or viewing motivational films. The scale includes items dealing with all desirable categories of physical education outcomes such as physical well-being, muscular strength and coordination, total physical and muscular endurance, acquisition of neuromuscular skills, use of leisure, mental health, social relationships, and safety aspects. Both forms appear in Appendix II, together with instructions and adapted methods of scoring.

Carr, in a study of the attitudes of freshmen high school girls, found positive relations between the degree of success girls exhibited in physical education and the degree to which they expressed positive attitudes toward many situations in the program.¹²

A suggested adaptation of this scale, which should have some predictive value for screening, in terms of their scores, freshmen girls with poor attitudes toward certain situations faced in physical education, appears in Appendix I. These are the ones Carr found apt to do poorly in physical education. Conversely, those whose attitudes were good were more apt to be successful in physical education.

SOCIAL ADJUSTMENT. Social development and socialization by means of games, sports, and other physical education activities have always been objectives of physical education. The playground and gymnasium provide the careful observer with numerous examples

¹¹ C. L. Wear, "Construction of Equivalent Forms of An Attitude Scale," *Research Quarterly*, March 1955, p. 113.

¹² Martha G. Carr, "The Relationship Between Success in Physical Education and Selected Attitudes Expressed by High School Girls," *Research Quarterly*, October 1945, p. 176.

of behavior indicative of the student's social feeling and degree of social adjustment.

Some descriptive criteria of a person with good social adjustment would be the following:

1. A feeling of social security as a result of social skills and know-how and acceptance by the group.

2. Interest in the games, hobbies, and activities favored by the majority of his classmates.

How may we get some valid quantitative indication of the degree of a student's social adjustment or maladjustment, his degree of harmony with his social group? Can we get some indication of his social growth from year to year? This is important not only for evaluating the degree to which we are attaining one of our important educational objectives but also for the guidance of individuals.

The Cowell Social Adjustment Index is reproduced and described in Appendix J.¹³ It has proved to be a helpful screening instrument for selecting students who are poorly adjusted socially as well as providing quantitative indication of the degree of adjustment. These poorly adjusted students are the boys and girls whom physical education should help. The tentative norms are based on the observations of three teachers, checking observations from both the positive and negative angles at different times. The norms are hence based on six ratings of each individual. The instrument has been subjected to the usual statistical requirements for internal consistency (by factor analysis), reliability, and validity.

COWELL PERSONAL-DISTANCE SCALE. The teachers' judgments of social behavior are apt to be based on mature, adult standards and to be indicative of the child's adjustment in dealing with adults in the classroom situation. But students employ standards of their own. A student's index on the Cowell Personal-Distance Scale depends largely on his degree and kind of social participation in his own group and therefore on his own social stimulus value. One's degree of belonging to or being accepted as a member of one's own social group is surely an important criterion of his adjustment to that group.

¹³ Charles C. Cowell, "A Suggested Index of Social Adjustment in the High School," *Educational Research Bulletin*, January 19, 1938, pp. 12-13.

This sociometric instrument is described in Appendix K and has been checked on several occasions for reliability and validity with satisfying results.

Are we interested in determining changes in group status of individuals from time to time? Is the little "fringer" still on the fringe of the group or is he being accepted more wholeheartedly by his peers? Is our physical education class or our basketball or hockey team becoming more socially integrated or cohesive during the season so that each individual accepts every other member of the group at a closer personal distance? This simple little device can be of assistance in determining the answers to these questions.

Although tentative norms are supplied for particular groups, administration of the tests or scales will furnish data for establishing norms commensurate with the environment, sex, physical maturation, and age of the particular group and accurately place the individual in his proper relation to these norms.

IDENTIFICATION OF LEADERS. Selecting student leadership for physical education classes is a difficult task. The criteria employed by teachers are not always the same as the criteria employed by the students. Being selected as a leader is one criterion of the degree to which a student has developed social learning and sensitivity to and understanding of other people.

Partridge has suggested a simple technique which proved highly valid for choosing boy scout troop leaders. There is no reason why it should not be equally adaptable to physical education classes.

By writing each boy's name on five different slips of paper, placing these all in a hat, and pulling them out at random in groups of five, each boy would be placed by chance with four other names in five different groups. There would be just as many groups of five names as there are boys in the group being rated.

The groups of names are then written on sheets of paper, with as many different groups on a page as convenient, still leaving plenty of space between them. The raters are then asked to go through the groups of five and choose one leader from each group making a cross before his name. . . . After the ratings on the sheets have been completed, they are gathered and tabulations are made of the actual number of votes received by each person.¹⁴

¹⁴ E. DeAlton Partridge, *Social Psychology of Adolescence* (Englewood Cliffs, N. J.: Prentice-Hall, Inc., 1938), p. 120.

INTERPRETIVE AND INTELLECTUAL DEVELOPMENT

Understandings or meaningful learnings refer to a group of educational outcomes other than information and skill. Meanings are concerned with cause-and-effect relationships—the "why" rather than the "how." Often the coach who calls every play or strategic maneuver gets this desired education instead of the players. Creative game strategy, critical analysis and experimentation, judgments in time and space (Can I steal on this catcher? Shall I make the throw from the outfield to third or home?), understanding of rules, etiquette, and historical background, and principles of applied physiology of activity as well as psychological principles, all are aspects of potential interpretive development, which is the ability to think, to solve problems, to make judgments, and to apply facts and principles.

Students are developing in their ability to think, analyze, form judgments, and make sound generalizations when they earnestly seek answers to such questions as these:

1. Why am I overweight?
2. How does one develop muscular strength?
3. How does one develop respiratory endurance?
4. What is involved in total fitness?
5. How can I develop skill in the crawl stroke?
6. Why and how do some students become leaders while others do not?
7. What are the values inherent in recreation?
8. How does one train for the mile run?
9. What are the rules of badminton?
10. How does one develop self-mastery and self-control?

Physical education teachers have been relatively weak in developing devices for evaluating the growth of pupils in the important areas of applied knowledge, understanding, and problem solving. Playing ability has been the chief criterion for evaluating the interpretive development of students, although correlations between the results of knowledge tests and skill tests are usually low. Knowledge of the rules of golf and what clubs should be used under certain conditions, important as it is, is no guarantee of skill on the golf course. Conversely, one can hardly play golf well without un-

derstanding the rules and techniques and how they apply to different situations. The acid test is performance, which results largely from kinesthetic education—learning the coordinations and muscular controls by practicing with a purpose.

KNOWLEDGE TESTS. There are a great number of acceptable knowledge tests dealing with the various physical education activities. Many of these have been standardized. Some suggested tests appear at the end of this chapter.

SELF-APPRAISAL. In planning and appraising their progress in physical education, students can be aided in understanding themselves and in taking stock of their total development by being encouraged periodically to consider the direction in which they are developing by checking on the following personality components:

Physical condition and appearance: posture, strength, endurance, habits, neatness of dress, personal hygiene, condition of skin, hair, and nails, masculinity (boys), femininity (girls).

Mental alertness: thoughtful, analytical, and reflective—explanations seldom need to be repeated.

Emotional make-up; self-confident, generally cheerful and happy, enjoy games and activities involving give-and-take contacts, feel at home in a group.

Leadership and energy output: quick and decisive in movement, like organizing and am quite good at it, persist at tasks even under difficulties, take responsibility.

Social development: talkative and active, have a number of friends of both sexes, am rarely censured or criticized by classmates, prefer to be a participant rather than a spectator.

Recreation: constructive use of leisure time, broad fund of recreation skills and interests.

Service contributions: do things not for self alone but for good causes in the school, community, and home.

Philosophy of life: What things do I most value in life? What would I most like to be? What kind of a picture do I have of myself? Whom do I idealize and accept as a model and why?

Kozman and her colleagues suggest that students might construct a rating scale based on items similar to those above for personal stock-taking and that the summary under the headings, "What I Explored," "What I Found," and "What I Need to Do," might be used

Outcomes of sports: an evaluation check-sheet¹⁵

To What Extent Did I Learn:	(1) Not at All	(2) Very Little	(3) Somewhat	(4) A Great Deal	(5) A Very Great Deal
1. To sacrifice my own personal "wishes" or desires for the good of the group or team?					
2. To test myself—to see if I could "take it," endure hardship and "keep trying" to do my best even under adversity?					
3. To overcome awkwardness and self-consciousness?					
4. To recognize that the group can achieve where the individual alone cannot?					
5. That each team member has a unique or special contribution to make in the position he plays?					
6. To share difficult undertakings with my "buddies" (teammates) because of struggling together for a goal?					
7. To respect the skill and ability of my opponents and be tolerant of their success?					
8. To make friendships with boys from other schools and to maintain good guest-host relationships in inter-school games?					
9. To feel that the school team helped break up "cliques" and factions in the school by developing common loyalty and community of interest?					

10. To consider and practice health and training routine such as proper eating, sleeping, avoidance of tobacco, etc.?
11. To "take turns" and to "share"?
12. To develop physical strength, endurance and a better looking body?
13. To be loyal and not "let my buddy, the coach, team, or school down"?
14. To give more than I get—not for myself but for an ideal or for one's school, town, or country?
15. To develop a sense of humor and even to be able to laugh at myself occasionally?
16. To think and act "on the spot" in the heat of a game?
17. To understand the strategy—the "why" of the best methods of attack and defense in games?
18. To understand and appreciate the possibilities and limitations of the human body with respect to skill, speed, endurance, and quickness of reactions?
19. That in sports there is no discrimination against talent? It is performance and conduct and not the color of one's skin or social standing that matters.
20. That nothing worthwhile is accomplished without hard work, application, and the "will to succeed"?

¹⁴ Charles C. Cowell, "Our Function Is Still Education!" *The Physical Educator*, March 1957, pp. 6-7.

as a basis for guidance, self-appraisal, and a progress report to parents.¹⁸

Another device for self-appraisal with respect to the outcomes of sports participation is suggested for use with boys, although it could be adapted for use with girls with a few slight changes.

The items contained in this evaluation check-sheet are all sound teaching objectives of sports. Good teaching should result in their acceptance by students as pupil purposes. They should be clearly discussed at the beginning of a sports season and posted in printed form on the locker-room bulletin board. Personal evaluations at the end of a season should be serious, with students checking the items anonymously for group analysis by the teacher.

A second copy of this check-sheet should be retained by the student. When the final season is appraised in terms of educational outcomes (based on group analysis) the individual students may check their personal copies in terms of the group norms as discussed by teacher and students.

EMOTIONAL RESPONSIVENESS

Interest inventories and attitude scales give some clue to the attainment of this rather intangible but very important educational outcome. If education consists of getting pupils to like the right things, then we are concerned with appreciations, interests, and ideals. We desire to have boys and girls learn to like difficult tasks and to get great emotional satisfaction out of carrying them to completion (staying on the squad, working hard, and putting the ball over the goal line, or staying with the synchronized swimming group until the planned program is a success). We want students to learn to like working with others in a group and to develop a positive, emotionally satisfying response to team work. We want them to develop a sense of loyalty to classmates, the team, the family, the school, the town, state, and nation.

Finally, we hope for the development of some esthetic appreciation of the beauty of the human body and its skilled performances in the dance, on the gymnasium floor, or on the athletic field. The skilled athlete is an artist who uses the human body as the medium of expression.

¹⁸ Hilda Kozman, Rosalind Cassidy, and C. O. Jackson, *Methods in Physical Education* (Philadelphia: W. B. Saunders Company, 1948), p. 351.

Means of measuring development in the personal achievements in this area of objectives are still problems for research. Until more fruitful findings, we must continue to judge and appraise on the basis of observation and sound intuition.

Reading references

Although knowledge is no guarantee of action, right action is based on valid knowledge. Rules, techniques, game strategy, proper care of equipment, history, and other associated learnings are based on knowledge. Many of these are discussed in detail in test and measurement texts listed on page 263. Critical examination and trial of a sampling such as the following is worthwhile.

1. Deitz, Dorothea, and Frech, Beryl, "Hockey Knowledge Tests for Girls," *Journal of Health and Physical Education*, June 1940, pp. 366, 387-388.
2. Grisier, Gertrude J., "The Construction of An Objective Test of Knowledge and Interpretation of the Rules of Field Hockey for Women," *Research Quarterly Supplement*, March 1934, pp. 79-81.
3. Heath, Marjorie L., and Rodgers, Elizabeth G., "A Study in the Use of Knowledge and Skill Tests in Soccer," *Research Quarterly*, March 1941, pp. 40-49.
4. Hewitt, Jack E., "Comprehensive Tennis Knowledge Test," *Research Quarterly*, October 1937, pp. 74-84.
5. Murphy, Mary Agnes, "Grading Student Achievement in Golf," *Research Quarterly*, March 1934, pp. 83-90.
6. Phillips, Marjorie, "Standardization of a Badminton Knowledge Test," *Research Quarterly*, March 1946, pp. 48-63.
7. Scott, M. Gladys, "Achievement Examinations for Elementary and Intermediate Tennis Classes," *Research Quarterly*, March 1941, pp. 40-49.
8. Schwartz, Helen, "Knowledge and Achievement Tests in Girls Basketball on the Senior High School Level," *Research Quarterly*, March 1937, pp. 143-158.
9. Snell, Catherine, "Physical Education Knowledge Tests" (Archery, Hockey, Fundamentals), *Research Quarterly*, October 1935, pp. 78-91.
10. ——— (Basketball, Soccer, Volleyball), March 1936, pp. 73-82.
11. ——— (Baseball, Horseback Riding, Tennis), May 1936, pp. 77-91.
12. Stratman, Alan D., and Cueton, T. K., "A Physical Fitness Knowledge Test for Secondary School Boys and Girls," *Research Quarterly*, March 1950, pp. 53-57.
13. Waglow, I. Z., and Rehling, C. H., "A Golf Knowledge Test," *Research Quarterly*, December 1953, pp. 463-470.
14. Zwarg, Leopold F., "Judging and Evaluation of Competitive Apparatus or Gymnastic Exercise," *Journal of Health and Physical Education*, January 1935, pp. 23-25, 48-49.



Appraising and recording student progress

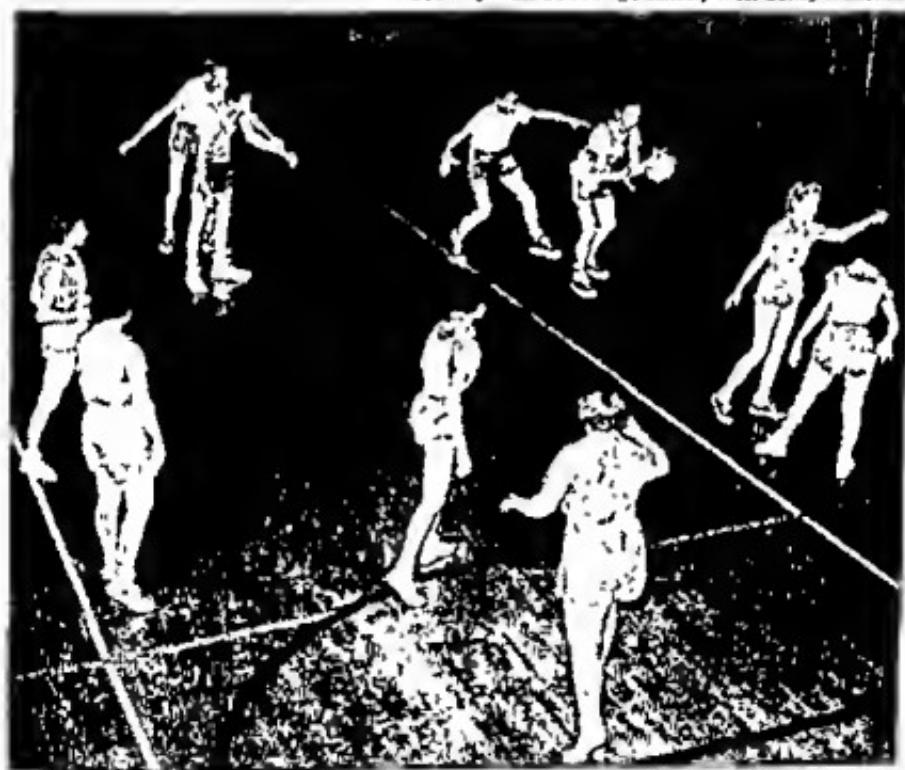
EVALUATION SEEKS TO determine the quality and amount of student development. The long-range view of a student's development and of the forces that have contributed to his present status and perspective is important if we are to be truly effective in teaching and guidance. We cannot stop with merely filling out a record or chart but, like a physician, we cannot make a correct prescription without an adequate diagnosis. Scores, ratings, and observations, which tend to give us a quantitative picture of personality, are useful only if they make

The recognition of man's organic unity and environmental dependence has required that physical education be in fact an education through the physical and hence take into account not only the technical learnings of a physical experience but also the associated and concomitant learnings that inevitably accrue. It is therefore absurd to limit one's objectives to physical outcomes; other outcomes emerge also. Recognition of the whole does not require minor respect for the physical; by virtue of the activities themselves the physical will always have a major role. Nor should there be any apology for its prominence in the proper education of young people. Anyone disposed to regard the physical lightly should remember that the physical was present at Bataan and Okinawa, as well as courage and intelligence, and persists as a part of everything that is good and true and beautiful.

—JESSE FEIRING WILLIAMS

possible a better description of personality than we would otherwise have. Records stand for individuals and give information from several sources that have a bearing on the problems of individuals. It is well to remember, however, that people are more than the sum-totals of their scores on separate measurable physical and psychological functions. Human personality is a complex of many variables.

Courtesy West Bend High School, West Bend, Wisconsin



Obvious enjoyment of a game well played

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Principles of good cumulative records

1. They should be based on objective evidence and reliable descriptions of behavior.
2. They should show trends of development of abilities and interests.
3. They should provide a means for recording measures in comparable and meaningful terms.
4. They should provide informational data in such form and order that they show the interrelationships between separate items.
5. They should be of the graphic type, with high "glance value," so that rapid generalizations may be achieved and trends in development easily noted by visualizing the data.
6. They should be organized into annual divisions and present an all-round picture of the student's developmental progress and not merely his academic achievement.
7. They should be administratively convenient and quickly reproducible by photostatic or similar process.

Purposes of cumulative records

Ordinarily the student's cumulative central folder will be either in the principal's office or in the office of the guidance director. These should be available for review by all teachers but should normally not be removed from the reference room.

Although reference is made here primarily to a cumulative record in the physical education area, which should be available to all teachers, the general purposes of all such records are the same, namely, to:

1. Supply teachers with information necessary to direct adequately the growth and development of students by assembling pertinent information regarding their intellectual, physical, and personal characteristics.
2. Indicate graphically the dominant behavior trends and achievements of students and furnish a true inventory of their development toward the objectives of the school.
3. Develop the student's observational insight concerning his own progress and furnish a more objective and understandable record to parents.

4. Provide a more adequate basis for student guidance and to discover pupils of exceptional talent in special fields.
5. Determine the developmental growth made by pupils year by year.

Suggested simplified cumulative records

Inherently, the cumulative record is a growth record. It is not a snapshot but a continuous graphic record of development. It stresses time sequence with comparable periods of time and comparable measurements. It gives a behavior description in objective form and the data therein are used, not merely compiled.

WETZEL GRID IN THE PHYSICAL EDUCATION PROGRAM

Good health is a basic prerequisite to satisfactory all-round scholastic achievement and progress. Certainly no one expects pupils in elementary or high schools to be able to put forth their best mental and physical efforts unless body and mind are in good condition. Physical health, therefore, has become increasingly emphasized and the desire to safeguard it has not only resulted in extensions to the work and personnel of the School Health Service but has also led to much wider cooperation in these endeavors between school authorities, parents, and the pupils themselves.

Yet, even greater efforts toward assuring physical fitness are bound to be called for in the newly proposed schemes "to intensify school curricula." It is, consequently, of immediate importance to recognize that such high-pressure plans "to up-grade" academic work offer little prospect of full success so long as some 30 per cent of the general school population continues to manifest demonstrable evidence of chronic *simple growth failure*.¹

Two fundamental points need to be stressed greatly: (1) No child can be considered healthy or physically fit so long as body growth is measurably below par, which is to say that good health in children is, for the most part, a matter of good growth. (2) Medical examinations, though indispensable to the school health program, cannot furnish the early evidence of growth failure that enables this disability to be recognized and dealt with in good time.

¹ Norman C. Wetzel, *The Treatment of Growth Failure in Children* (Cleveland: NEA Service, Inc., 1948).

The Wetzel Grid technique provides a simple, practical method for periodic growth check-up of individual pupils. Some of its chief features are readily apparent in the "long-term" record in Figure 1. Further principles and applications are illustrated in the two small inserts.

Point-to-point appraisal of growth is accomplished by plotting the two curves (*ABC* and *I-2-3*) from the weight-height-age values entered in the data table and, thereupon, by comparing each curve with its own background pattern.

The channel system, on the left, is used to judge the significance of points on *ABC* as well as of the trend it displays, and, in particular, to measure (i) body shape (i.e., physique), (ii) body size, (iii) the direction of physical development, and (iv) sequential changes in these elements.

Thus, for example, the seven channels ($A_1 \dots M \dots B_2$) represent a gradation from stocky to very slender body-types. Body size, on the other hand, is measured in Grid "levels" as read off from the diagonal scale along the channel system (viz., 0, 20, 44½, 121, . . .). As for the direction of physical development, channel-wise progress means that a child is maintaining his physique constant as he continues to grow in size. Clearly, therefore, the preferential direction of growth (in healthy children) is along the channel system, as shown by the segment (*ab*) in the left insert, and not across-channel, (*ac*), which signifies, instead, a corresponding loss of physique, and hence, of actual body substance. The converse, that is, the recovery of and gain in physique, are illustrated in the right-hand insert by the silhouettes of a boy who returned along the segment (*rs*) from a position of extreme slenderness in B_4 , almost to "medium" physique on the border between channels B_1 and B_2 .

Finally, when level (i.e., size) is plotted against age in the second panel of a Grid, one obtains a curve or *auxodrome*, such as (*I-2-3*), which measures the speed of growth simply and accurately. In fact, no other method supplies the equally broad yet equally sensitive and reliable rule that speed (of growth) should be held very close to the uniform value of 1 level/line per month, or 12 level/year, throughout the span of school life—if top-quality growth is sought—regardless of age, sex, or body-type.

The Grid technique thus provides an objective basis for classifying pupils into "satisfactory" and "unsatisfactory" growth groups.

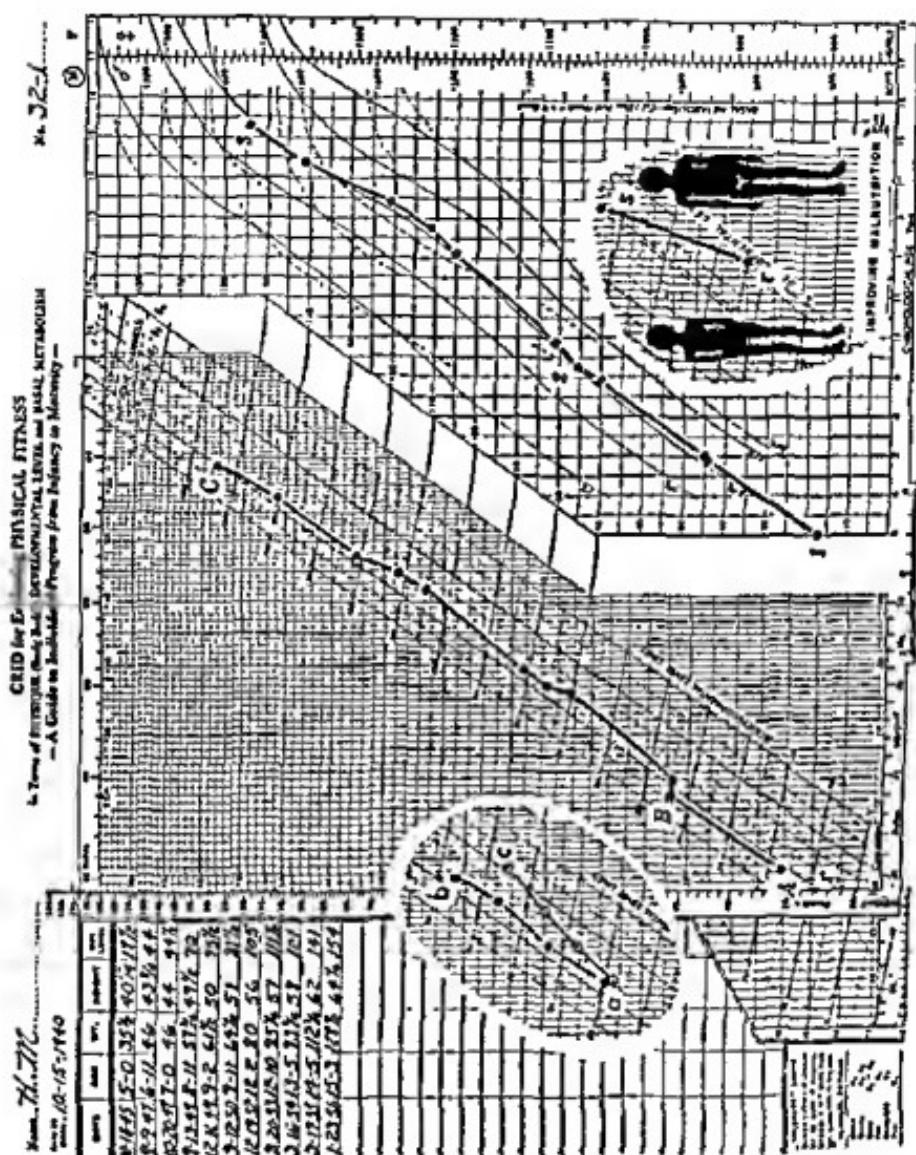


Figure 1. The pair of curves, (ABC) and (1-2-3), plotted from the tabulated wt.-ht.-age data, illustrate channel and auxodromic trends typical of over-all "good" growth throughout a ten-year span of school life. As described in the text, the lad showed superior scholastic as well as athletic achievement. (For inserts, see text.)

For, persistent deviations from the Grid standards of direction and speed—even so little as $\frac{1}{2}$ channel to right or left in 10 levels of advancement, and/or slowing down to 9-10 levels per year—represent sufficient cause for medical study, appropriate referral and periodic check-up, at quarterly or semi-annual intervals.

In Figure 1 we see that both the channel course (ABC) and the auxodrome (1-2-3) exhibit only minor deviations, e.g., at B, a moment of family distress and transfer to a foster home for 2 years. At C and 3, he won a science scholarship along with swimming and

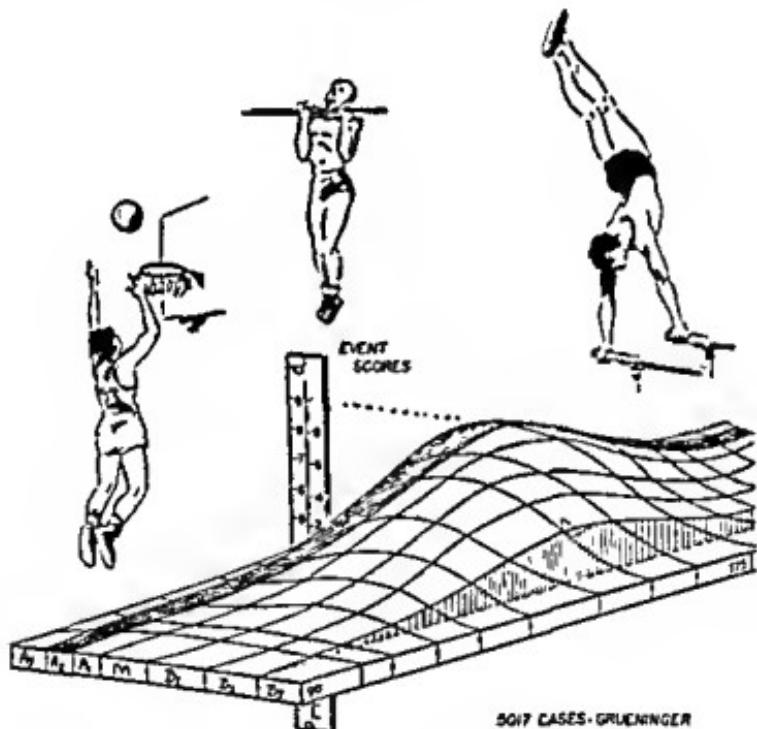


Figure 2. A schematic representation to show that scores in many test events follow a three-dimensional regression pattern with respect to body size and physique, most maxima being in the neighborhood of level 175 in channel A₂. Equalization and handicapping are thus easily arranged with the help of Grid ratings.

hockey awards. His athletic achievements were hardly unexpected in view of his consistent A₁A₂ trend of development. Growth speed, notably, averaged 1.11 *level/month*, for the 10 year 3 month period of observation beginning at age 5.

Further applications of the Grid technique and of the basic correlations between good growth and good athletic performance are suggested by the "Mound-diagram" of Figure 2. In an extensive study at the University of Michigan, Grueninger was able to show that test scores vary systematically with level and channel, that is, with body size and physique. For many events, maximum achievement is reached at about level 175 by subjects in the stocky A₂ channel. Greater and smaller sizes, as well as greater and lesser physiques, tend to be less favorable to general test performance as suggested by the 3-dimensional regressions of the "Mound."²

We see, then, even in this brief review, that the objective of physical—and, indeed, of all—education namely, optimum fitness, depends basically on nurturing and preserving good physical growth in children. That lesson, as important and clear as it has long been, becomes even more imperative today. It calls for resolute, systematic follow-up by sound programs and methods. Too often has this area been left to guesswork, at a price neither parents, schools, nor communities can afford in today's world.

The Wetzel Grid card will fit into a standard-size file folder, on which it is proposed to print the tentative cumulative physical education records that follow.

Cumulative record for boys

Where a battery of tests is used for gathering data on a student's development, the results may be recorded on a "profile" which indicates the student's strengths and weaknesses in important areas of physical education and shows his general standing in relation to others of similar maturity and body structure.

1. The Graphic Development Profile is to be used over a three- or four-year period for either junior or senior high school.
2. Distinguishing graph profiles for each year may be entered in different colors and lines as follows:

² Robert McKinley Grueninger, *Physical Performance of High School Boys and College Men Classified by the Wetzel "Grid for Evaluating Physical Fitness"* (Ann Arbor, Michigan: microfilm abstract of a doctoral thesis, 1949), pp. 139-140.

GRAPHIC DEVELOPMENT

GENERAL		G O SCALE 100	T SCALE 100	PER- CENT- ILE SCALE 100	STRENGTH		ATHLETIC APTITUDE	SWIMMING ABILITY HEWITT SCALE			
					LARSON TEST	MCCLOY TEST		4 ITEM TEST	25 YD RUNNING	50 YD CRAWL	25 YD BACK	25 YD SIDE	BREAST
		-80	56	28							
		-70	62	30							
		-60									
		-55									
		-50									
		-45									
		-40									
		-35									
		-30									
		-25									
(PHOTO)											
SPORTS PARTICIPATION								POSTURE & SKELETON			
DATE	FRESH	RESERVES	VARSITY	INTRAMURAL	DATE						

7th grade or 10th grade Green-----

8th grade or 11th grade Red

9th grade or 12th grade Black.....

any additional year Orange-----

The different graph-line designations indicate the differences since colors are not reproduced in photostatic records.

3. Classify boys by the McCloy Classification Index and by the California Classification Index respectively.
4. Test for strength by the Larson Strength Test calibrated by Bookwalter to the McCloy Classification scheme or use the McCloy Pull-up Strength Quotient.

PROFILE (BOYS)

SOCIAL ADJUSTMENT KOWELL INDEX	GROUP STATUS LOWELL PERSONAL DISTANCE	PERCENTILE SCALE 10-2	T SCALE 100	G SCALE 50	NAME	ADDRESS	TEL.
		55	70	80			
		50					
		61	60	70			
		80					
		70		60			
		60		55			
		50	50	50			
		40					
		30		45			
		20		40			
		18	60				
		10		30			
		1	20	20			
		0	0	0	PATE PHYSICAL EDUCATION GRADES (BY MARKING PERIODS)		
HEALTH NOTES							

McCloy found that pull-up strength (chinning) alone is very highly correlated with performance in athletic sports and with total physical strength. Divide the McCloy Pull-up Strength Score by the norm for strength according to age and weight and multiply by 100. This gives the pull-up strength quotient. Hence, a boy with a strength quotient of 100 is average in strength for his sex, age, and weight, but a person with a strength quotient of 120 is, in respect to strength, 20 per cent above average for his sex, age, and weight.

The per cent above or below the average (score 100) may be indicated on the cumulative record by using the percentile scale; that is, a boy with a pull-up strength quotient of 125 would be checked 25 percentage points above the 50-percentile line. A boy

with a quotient of 75 would be checked 25 percentage points below the mid-line (average).

Although these scores are not truly percentile scores the scale on the chart will indicate the per cent above or below the average if the percentage points are counted from the midline. Scoring tables and procedures may be found in Appendix L.

5. The Athletic Aptitude Score is based on classifying boys by the California Classification scheme and then using the four items scored on the scales available. The scores on the four items are added and the sum total divided by four and recorded under the 6σ scale values; that is, an average score of 55 on the 6σ scale would mean that the boy is about 38 per cent above the average or that 62 per cent of the boys of similar degree of maturity and body structure score worse than he does.

The items—basketball throw for goal (number of baskets in one minute), jump and reach, playground baseball throw for distance (12-inch outside seam) and 50-yard dash (or the potato race)—were selected as events having been shown to be highly related to general all-round athletic skill. Furthermore, achievement scales based on the California Classification scheme exist for these items.

A few references to the possible validity of the 4-item test are in order. With 438 junior high school boys, each boy was asked to name the three best all-round athletes in his own class. All boys were then tested in the 50-yard dash, standing broad jump (equivalent to jump and reach), and the softball thrown for distance. The rank difference correlations between the resulting objective athletic index and being considered a good "all-around athlete" by one's classmates were all positive and moderately high at all three grade levels, averaging +.70.³

Seymour found a multiple correlation coefficient of .957 for a four-item test of the softball throw, Sargent jump, 60-yard dash, and basketball dribble and an eight-item battery including, in addition to the above, the football throw, volleyball serve, soccer dribble, and a chinning strength test.⁴

³ L. W. McGraw and J. W. Tolbert, "Sociometric Status and Athletic Ability," *Research Quarterly*, March 1953, pp. 72-80.

⁴ Emery W. Seymour, "Classification of Emory University, Male Freshmen in Physical Education Classes," *Research Quarterly*, December 1953, pp. 459-62.

6. The Hewitt Swimming Ability Scales⁵ provide an excellent means for diagnosing difficulties of students when one is encouraging all-around swimming ability. The scale is not for absolute beginners. For these, the instructor may use the space with modifications or devise items based on T-scale or percentile scores resulting from the testing of one's own group of beginners.
7. Social development and socialization by means of games, sports, and other physical education activities is an objective of physical education and some of our better contributions have resulted from achieving these objectives.

Some means of quantitatively charting students' degrees of harmony with their social group, their "social security," and their social growth from year to year is important for evaluation and for the guidance of students.

The Cowell Social Adjustment Index⁶ is the result of six ratings by three teachers on each student. Three ratings are on positive Form A and later three are made on negative Form B; the total differential scores are taken as the index score. Percentile scales are provided.

9. A simple but effective sociometric device is needed to indicate the status of the student in relation to his peers. If students are isolates who are rejected by many of their peers, our task is to discover the variables related to this rejection and to help the student become more accepted. In terms of guidance, it may mean improved game skill, an improved "hair-do," or better grooming. The reliability and validity of this device is discussed in the reference just given for the Social Adjustment Index.

10. The space on the cumulative record for other items needs little explanation. A record of notes on individual conferences with students or special anecdotes of significant behavior—good or bad—in the gymnasium or swimming pool or on the playing fields is important if we really want to understand and help pupils, and appraise and report accurately on their development.

11. The inclusion of a snapshot or passport picture is of great value in readily identifying students.

⁵ Jack E. Hewitt, "Achievement Scale Scores for High School Swimming," *Research Quarterly*, May 1949, pp. 174-75. See also Appendix M.

⁶ Charles C. Cowell, "Validating an Index of Social Adjustment for High School Use," *Research Quarterly*, March 1953, pp. 7-16.

The printing of the cumulative record card lengthwise on a standard file folder is of great help. The cumulative health record or Wetzel Grid card may be slipped into this folder, and any anecdotes may be written on a piece of paper, dated, and put in the folder immediately to be entered formally when one has time to enter them.

Under health notes, such an item as "needs dental attention" or "needs glasses" will remind us to urge the student and parents to do something.

Cumulative record for girls

The format for the girls cumulative record is the same as the boys, except for the tests included. What has been written regarding the purpose of the record and the way in which it can be used for a three-year or four-year period, need not be repeated here.

A graphic profile for girls beginning at the junior high school level can have significant meaning for the physical education teacher but also for those responsible for the total guidance of the students.

1. The Scott Motor Ability Test is suggested because it is valid and fairly easy to administer. This test has been constructed to measure general motor ability. The minimum battery that is recommended by the authors is used in the cumulative record for girls.

2. The basketball throw for distance takes a space of 80 x 20 feet with a throwing line marked about 8 feet from one end of the course, with parallel lines marked at 5 foot intervals, the first parallel mark 15 feet in front of the throwing line. Students should be instructed that any type of throw may be used, with or without a run, but that both feet must remain behind the throwing line. This throw for distance tests shoulder girdle strength and co-ordination. After three trials, record the distance of the best throw in feet.

3. The standing broad jump. Use outside jumping pit with take-off board within 30 inches from the edge of the pit or, if indoors, use mats at least $7\frac{1}{2}$ feet long placed against the wall. Toes may be slightly curled over the end of the take-off board. Mark the mat at 2-inch intervals. Measure distance jumped from the take-off board to the nearest heel or body mark and record in inches the best of three trials.

4. The obstacle race course is described fully on page 321. The student to be tested starts from a back-lying position on the floor with the heels at line A. On the signal, she gets up and starts running toward J. As runner comes to each square on the floor, she steps on it with both feet. The runner must run twice around J, turn back to D, go under the crossbar, get up on the other side, run to line C and continue running between B and C until she comes to C for the third time. Record the score to the nearest .1 second that is used in running the course.

5. When using the 3-item battery, the general motor ability (G.M.A.) is found in two ways. One is by recording the raw score for each of the three tests and then using the formula $2 \times \text{basketball throw} + 1.4 \times \text{broad jump} - \text{obstacle race}$. (See multiplication table, appendix, page 320.) Referring the sum of these weighted scores to the motor ability achievement scales (see appendix, page 318), the student's T-score may be noted. The simplest method, however, is to add the T-scores for the three events and take the average of the three as the C.M.A. T-score.

6. Using the space entitled "Activity Participation" will help the teacher or counselor determine at a glance the extent to which students are getting experience in leadership and physical recreation that are also important objectives of physical education.

Knowing the individual girl and her special problems and abilities is the teacher's first step in discharging her professional responsibility.

A development profile helps the teacher to recognize deviations in development. Physical, emotional, and social deviations seem to hang together. A deviation in one area seems to be accompanied by deviations in other areas, indicating the interrelatedness of development.

Guidance begins before problems arise. The school should be more interested in preventing maladjustment than in curing it. Physical education experiences should assure the pupils opportunities to fulfill their basic personality and health needs through the interest, sympathy, responsiveness, and understanding shown them by their teachers. This is the most valuable kind of guidance any school can offer.

Specific uses of measurements

Since the outcomes of practices in physical education reflect what we have been doing in our classes, more accurate measurement of these outcomes is needed in order to:

GRAPHIC DEVELOPMENT

1. Inform students and parents of the students' physical ability and progress.
 2. Stimulate pupil interest in the activities of the program and a friendly and scientific attitude toward tests.
 3. Enable the teacher to employ the optimum degree of competition between individuals and groups by controlling the dosage.
 4. Employ diagnostic and remedial teaching by analyzing the strengths and weaknesses of students.
 5. Determine credits, honors, and grades based on equal units of difficulty, skill, and achievement and expressed in quantitative terms.

PROFILE (GIRLS)

SOCIAL ADJUST- MENT	GROUP STATUS	PER- CENT	T	6 0 0	NAME	ADDRESS	TEL	DATE RECORD OF CONFERENCES & SIGNIFICANT ANECDOTES
		100		100				
		58	70	80				
		50						
		84	60	70				
		80						
			70	60				
			60	55				
			50	50	50			
			40					
			30		45			
			20		40			
			18	40				
			10		30			
			1	20	20			
			0	0	DATE PHYSICAL EDUCATION GRADES (BY MARKING PERIODS)			
HEALTH NOTES								

6. Classify and equate students into groups having similar degrees of maturity, body structure, and motor skills.

7. Understand more fully the physical and psychological needs of individual students.

8. Develop a closer interrelationship between physical education and health and the educational services represented by these two departments.

9. Augment the findings of the health examination by functional testing of the organism in action for strength, endurance, speed, reaction time, and general coordination.

10. Serve as incentives for students to develop personal pride and to strive for higher objective individual standards of health and physical efficiency.

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PROFILE (GIRLS)

SOCIAL ADJUSTMENT	GROUP STATUS	PERCENT	T SCALE	G SCALE	NAME	ADDRESS	TEL
COWELL PERSONAL DISTANCE INDEX	COWELL PERSONAL DISTANCE	100	SCALE	100	DATE	RECORD OF CONFERENCES & SIGNIFICANT ANECDOTES	
		88	70	80			
		90					
		84	60	70			
		82					
		70		60			
		60		55			
		50	50	50			
		40					
		30		45			
		20		40			
		16	40				
		10		30			
		1	20	20			
		0	0	DATE	PHYSICAL EDUCATION GRADES (BY MARKING PERIODS)		
HEALTH NOTES							

6. Classify and equate students into groups having similar degrees of maturity, body structure, and motor skills.

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HOMOGENEOUS GROUPING

No one will deny that to teach swimming to a class of thirty pupils of various degrees of skill without grouping them according to present ability is a hopeless task. The same could be said of students and tumbling or basketball.

The fact that students who are in a lower group in one activity may be in the upper group in another protects the ego or self-regarding attitude of the student. Some reasons for considering homogeneous grouping are the following:

1. It assists the teaching process and makes for more effective learning.
2. The activities are more easily adjusted to the ability and performance levels of the pupils.
3. The skilled pupils are not held back and move on to an advanced level, while the less skilled are happier in not being discouraged by the obvious differences between themselves and the more skilled students.
4. It serves as the only method of eventually equalizing skill levels so that the ultimate objective of bringing together all pupils may be achieved.
5. It is the most efficient method of satisfying the needs and interests of individual pupils.
6. It makes for fairness in grading and keeps motivation at a higher level because there is less discouragement.

MARKS IN PHYSICAL EDUCATION

The old method of bookkeeping in physical education had little relationship to the functional outcomes of what we today consider educationally important. We now realize that reports to students and parents should be in harmony with what we consider educationally important in physical education and should not be mere records of physical skills.

Some criteria of any grading system might be:

1. Any system of appraising and reporting student progress should be informative, carry specific suggestions for improvement, and serve as an incentive for greater effort on the part of the student.
2. It should reflect development in the direction of several important educational outcomes and not merely academic progress.

Courtesy Midway Photo Shop, Pullman, Washington



Good health means good citizens

3. It should tell not only what the student has done to the subject matter but what the subject matter has done to the student.

4. It should represent clear-cut objectives to pupils, teachers, and parents so that students may learn more of permanent value through their activities because the objectives are clear and they know that progress toward their achievement is being evaluated.

Unless these criteria can be applied to a high degree, perhaps it would be better to give no grades at all in physical education because of the possible psychological damage in an area of education that is potentially the most humanizing area of all.

One harmonious underlying philosophy should permeate all activities of a given school. Students are not merely learners of mathematics, swimming, social studies and the like, but personalities of which we are the guardians and development supervisors.

Physical education is an integral part of the total educational structure and not a dangling accessory to it. Ours is a great and important task, demanding all of the technical training we can get.

How we use this training will be determined by our fundamental philosophical beliefs, our sense of values, the things we cherish or prize educationally. To suggest some directions for this thinking and action, with special emphasis upon the physical education of boys and girls in our secondary schools, has been the pleasant task of the authors of this volume.

Reading references

1. American Association for Health, Physical Education and Recreation, *Measurement and Evaluation Materials in Health, Physical Education and Recreation* (Washington: The Association, 1950).
2. Bookwalter, Karl W., *Test Manual for Indiana University Motor Fitness Indices for High School and College-Age Men* (Bloomington: School of Education, Indiana University, 1943).
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4. Bovard, John F., Cozens, Frederick W., and Hagman, E. Patricia, *Tests and Measurements in Physical Education* (Philadelphia: W. B. Saunders Company, 1949).
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12. Larson, Leonard A., and Yocum, Rachael D., *Measurement and Evaluation in Physical, Health, and Recreation Education* (St. Louis: The C. V. Mosby Company, 1951).

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14. Neilson, N. P., and Cozens, Frederick W., *Achievement Scales in Physical Education Activities for Boys and Girls in Elementary and Junior High Schools* (New York: A. S. Barnes and Company, 1934).
15. Scott, M. Gladys, and French, Esther, *Evaluation in Physical Education* (St. Louis: The C. V. Mosby Company, 1950).
16. Weiss, Raymond A., and Phillips, Marjorie, *Administration of Tests in Physical Education* (St. Louis: The C. V. Mosby Company, 1954).

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16. Weiss, Raymond A., and Phillips, Marjorie, *Administration of Tests in Physical Education* (St. Louis: The C. V. Mosby Company, 1954).

APPENDIX A

Teaching for relaxation

1. The subject to be tested lies relaxed on the floor.¹
2. The tester picks up the arm of the one being tested by the wrist and swings it gently at the shoulder joint. The results can be recorded as follows:

	<i>None</i>	<i>Little</i>	<i>Moderate</i>	<i>Great deal</i>
Assisting (helps tester)				
Posturing (holds part in a set position)				
Resisting (hindering tester)				

Some other indications of tension are listed below. A check of these may help to evaluate one's ability to relax.

	<i>Yes</i>	<i>No</i>
Do I often feel fatigued?		
Do I get annoyed easily?		
Do I tear about at breakneck speed?		
Do I drum aimlessly on desk?		
Do I find it hard to sit still?		
Do I jump at slight noises?		

¹ Department of Physical Education for Women, *A Syllabus for Body Mechanics* (Lafayette, Indiana: Purdue University, 1954 [revised edition]).

APPENDIX B

Activity program and point system

The following point system has been adopted by the Indiana League of High School Girls' Athletic Associations, to be used by its active members to further the development of a more effective health, physical education, and recreation program for the girls of our state.²

I. METHOD OF EARNING POINTS

The activities for which points are granted are divided into three groups: organized activities, unorganized activities, and achievement tests.

A. Organized Activities

1. Organized activities are those conducted after school or during the noon hour, under the supervision of the school personnel.

(Note: Elective physical education classes may be counted for points if there is not opportunity for after-school activities.)

2. Basis for granting points:

- a. Points may not be received for more than two organized activities and one unorganized activity at the same time. (Term of at least six weeks duration.)
or
One organized and three unorganized at the same time.

- b. Ten points shall be granted per season (at least one thirty minute period per week) for each organized activity of at least six weeks duration. Exception: Four weeks for outdoor activities in which time at least six practices must be held and attended.

- c. Points are granted on the basis of the actual number of minutes or hours, exclusive of dressing time, spent in any organized activity during a stated period of time.

- d. A term of less than six periods in any one activity during a stated period of time shall not be counted toward points.

3. Maximum daily participation:

Not more than two hours of activity in any one day may be credited for points.

² Reproduced with the permission of The Indiana League of High School Girls' Athletic Associations, Roseen Pickard, President.

4. Suggested organized activities:

(Maximum of 20 points per activity per year.)

- | | |
|---|---------------------------------------|
| 1. Aerial dart | 14. Horseshoe pitching |
| 2. Archery | 15. Kick ball |
| 3. Badminton | 16. Leaders' games |
| 4. Basketball | 17. Elective physical education class |
| 5. Bowling | 18. Billery |
| 6. Captain ball | 19. Shuffleboard |
| 7. Deck tennis; singles, double or team | 20. Skating; ice or roller |
| 8. Dancing; ballroom, folk, modern, square, tap | 21. Soccer |
| 9. Duck pin bowling | 22. Softball (outdoor or indoor) |
| 10. Golf | 23. Speed ball |
| 11. Hiking | 24. Swimming |
| 12. Hit-pin baseball | 25. Tennis: lawn, paddle or table |
| 13. Hockey | 26. Track and field |
| | 27. Tumbling |
| | 28. Volleyball |

(Note: Other activities of the physical education program may be used also.)

5. Rules for games:

All sports are to be played according to the rules for women as authorized by National Section on Women's Athletics of the American Association for Health, Physical Education and Recreation. (National Section on Women's Athletics, 1201 Sixteenth Street, Washington 6, D. C.)

B. Unorganized Activities

1. Unorganized activities include tennis, skating, bicycling, and other similar activities which are carried on by the individual outside of school and not under direct supervision of the teacher.

2. Basis for granting points:

- Same as for organized activities.
- Five points shall be granted per season (at least one thirty minute period per week) for each unorganized activity of at least six weeks duration. (Four weeks for outdoor activity including at least six 30 minute periods.)

- Same as for organized activities.

- Same as for organized activities.

3. Maximum daily participation:

- Same as for organized activities.

4. Suggested unorganized activities:

(May be repeated with a maximum of 20 points per year.)

- | | |
|---------------------|---|
| 1. Archery | 9. Horseshoe pitching |
| 2. Badminton | 10. Shuffleboard |
| 3. Bicycling | 11. Skating (ice or roller) |
| 4. Bowling | 12. Skiing |
| 5. Coasting | 13. Softball |
| 6. Dancing | 14. Swimming |
| 7. Golf | 15. Tennis: lawn, paddle, table or deck |
| 8. Horseback riding | 16. Walking |

5. Walking:

- a. The walking listed under unorganized activities may be that walking which is done to and from school providing the distance is at least one mile one way and the girl walks daily for at least a six weeks season.

C. Achievement Tests
(May not be repeated)

Basis for granting points:

Ten points may be received for successfully passing each achievement test except those listed 5 points. There should be no definite practice period as a warm up period before taking the test. A maximum of fifty points is all that any one student may receive each year for achievement tests.

1. Archery (six tests):

Pass standard test of the camp or school division of National Archery Association of the United States, 200 Caligni Avenue, New Rochelle, N. Y. These tests may be passed in summer if certified record is obtained.

- a. Yeoman test (Score 100 points with 30 arrows at 15 yards)
- b. Bowman test (Score 160 points with 30 arrows at 20 yards)
- c. Archer test (Score 160 points with 30 arrows at 30 yards)
- d. Silverbow Sharpshooter test (Score 160 points with 30 arrows at 30 yards)
- e. American Archer test
- f. Make a grade of at least 85% on written test.

2. Badminton (three tests):

Use official doubles badminton court. Draw a line (A) parallel to the net dividing the doubles service court into two equal parts.

a. Short service test

Serve 8 out of 10 shuttlecocks into court diagonally opposite so that the shuttlecock lands between the short service line and line "A." 5 serves from R court and 5 serves from L court.

b. Long service test

Serve 6 out of 10 shuttlecocks into court diagonally opposite so that the shuttlecock lands between line (A) and the long service line for doubles—5 serves from R court and 5 serves from L court.

- c. Make a grade of at least 85% on written test and officiate satisfactorily in a match.

3. Basketball (four tests):

- a. Goal throwing: Score 7 out of 10 attempts from the free throw line.
- b. Score 15 field goals in one minute taking the first shot from the free throw line. The contestant follows up the shot and continues shooting for the basket from wherever the ball is caught or recovered. She may use a legal dribble if necessary to get into a better shooting position.
- c. Basketball pass for accuracy (5 points):

Use a target circle 4 ft. in diameter. Stand 20 feet from target and throw using any style of throw. Score 14 out of 15 attempts. Count shots hitting on line.

- d. Rules and refereeing: Make a grade of at least 85% on a written test on basketball rules.

4. Bowling (two tests):
 - a. Use a regulation alley. Make a score of 150 for one game or make an average score of 130 pins in three consecutive games.
 - b. Written test with grade of at least 85%.
5. Ballroom dancing (four tests):
 - a. Demonstrate waltz, two-step, and foxtrot steps. Execute three complete dances (3 records or pieces of music) using these three steps showing enough skill to lead, to relax and to be led.
 - b. Folk—Execute from memory four folk dances which include the mazurka, waltz, polka, and schottische steps.
 - c. Modern—Demonstrate the following steps and be able to recognize and correlate each step to its proper music:

Walk (4-4 time)	Hop	Leap
Skip	Jump	Slide
Run		Gallop

- d. Square dancing—execute from memory four nationally recognized square dances.
- e. Tap (two tests)
 - (1) Demonstrate 3's, 7's, and waltz clog steps. Execute two tap dances from memory.
 - (2) Demonstrate 3's, 7's, and waltz clog steps. Execute one original tap dance.
6. Deck tennis (one test):
 - a. Written test covering rules of singles and doubles with a grade of 85% or
 - b. Written test covering rules of team deck tennis with a grade of 85%.
7. Duck pin bowling (two tests):
 - a. Using a regulation alley, make a score of 100 for one game or make an average score of 65 pins for three consecutive games.
 - b. Written test with a grade of at least 65%.
8. First aid (one test):
 - a. Pass Standard Red Cross First Aid Test presenting certificate from accredited Red Cross instructor. (75% necessary grade to pass.)
9. Golf (two tests):
 - a. Standing on the green five feet from the hole, score 5 holes out of 7 attempts.
 - b. Play nine consecutive holes in par plus 15.
10. Hockey (three tests):
 - a. Dribble:
Ball placed at the point where striking circle meets goal line. Performer dribbles ball along goal line, in and around goal posts, and back to starting point in 8 seconds.
 - b. Drive at goal:
Place ball on striking circle directly in front of goal. Score 4 out of 5 attempts from stand still. Score 4 out of 5 attempts from run.
 - c. Make a grade of at least 85% on a written test.

11. Horseshoe pitching (one test):
Stand 20 ft. from stake, using men's regulation horseshoes, score 5 ringers out of 20 attempts.
12. Leaders' test (three tests):
 - a. Teach four new games to a group of students.
 - b. Officiate satisfactorily for three games in any team sport. 5 points for each sport.
 - c. Officiate as "caller" for 3 square dances from memory.
13. Riflery tests (four tests):
Use the National Riflery tests, Junior Division, National Rifle Association, 1600 Rhode Island Ave., Washington, D.C., Barr Building. These may be passed during the summer and a record presented by a qualified instructor.

a. Pro-Marksman	c. Marksman First-Class
b. Marksman	d. Sharpshooter (5th Class)
14. Shuffleboard (one test):
Know rules and pass test with at least 85% grade.
15. Soccer (three tests):
 - a. Line is drawn 20 yards from goal post across field. 25 yard dribble to 20 yard line, and kick before reaching 20 yard line for goal. Score 5 out of 8 attempts.
 - b. From a point on the goal line, punt the ball 25 yards.
 - c. Make a grade of at least 85% on a written test.
16. Softball (five tests):
 - a. Pitching: Pitch a 12" playground ball into a target 18" by 36" which is 18" from floor or ground. 7 out of 10 times using the legal pitch.
 - b. Base running (5 points):
Using a 35' indoor diamond, start with one foot on home plate and circle the bases in 8.5 seconds, or run a 55' outdoor diamond in 13.5 seconds.
 - c. Batting:
Using a 35' diamond, as a minimum, stand in batter's box, toss the ball into air and make a fair hit into right field, center field, and left field in rotation. Five attempts are allowed for the three hits.
 - d. Target throw for accuracy:
Use circle five feet in diameter—center 4 feet from floor. 11el line 60 feet from target—use overhand throw only. Count shots hitting on line—score 15 out of 20 tries.
 - e. Make a grade of at least 85% on a written test.
17. Speedball (two tests):
 - a. Score 3 out of 5 attempts using the drop kick.
 - b. Know rules and pass test with at least 85%.
18. Swimming (six tests):
All these tests may be passed during the summer and a certified record from Water Safety Instructor presented to sponsor of C.A.A.
 - a. Pass Beginner test of the A.R.C., or the Minnow test (21) of the Y.W.C.A. or Y.M.C.A.
 - b. Pass Intermediate test of the A.R.C. or Fish test (10) of the Y.W.C.A. or the Y.M.C.A.

- c. Pass Swimmer's test of the A.R.C. or Flying Fish Test of the Y.W.C.A. or Y.M.C.A.
 - d. Pass Advanced Swimmer's test of the A.R.C. or Shark Test of the Y.W.C.A. or the Y.M.C.A.
 - e. Pass Junior or Senior Life-Saving Test of the A.R.C. or Junior or Senior Life-Saving Test of the Y.W.C.A. or Y.M.C.A.
 - f. Any four standard dives executed in good form.
19. Table tennis (one test):
Know rules and pass test with at least 85% grade and officiate satisfactorily in a match.
20. Tennis (three tests):
- a. Serve 8 out of 10 into court diagonally opposite server and not more than 3 feet above net. Serve 5 serves from R court, and 5 serves from the L court.
 - b. During successive return of strokes against a wall from a distance of not less than 12 feet, use each of the following strokes in good form at least five times each: forehand, backhand.
 - c. Know rules and pass test with at least 85% grade. Officiate as umpire satisfactorily in match between girls of your own school.
21. Track and field (three tests):
- a. Throw a 12" indoor regular softball 120 feet. Or throw a regulation basketball 60 feet.
 - b. Jump 3'-9" in a running high jump, or
Jump 8'-5" in a standing broad jump, or
Jump 13 feet running broad jump, or
Jump 25 feet in the hop-step-and-jump.
 - c. 50 yard dash in 8 seconds (5 points) or
75 yard dash in 10.6 seconds (5 points).
22. Tumbling and stunts (one test):
Execute in good form the first four stunts and five chosen from the remainder of the list.
- Required:
- 1. Forward roll, S0-51
 - 2. Backward roll, 55-56
 - 3. Cartwheel, 71-72-73
 - 4. Headstand, 68 (hold 5 sec. without assistance)
- Any 5:
- 5. Upspring, 27
 - 6. Through stick, 35
 - 7. Cricket walk, 49
 - 8. Elephant walk, 121
 - 9. Sitting mount to thigh balance, 149
 - 10. Eskimo, 108
 - 11. Angel balance, 132
 - 12. Standing mount, 144
 - 13. Hand stand, 75-76 (held 5 sec., one hand assistance if necessary)
 - 14. Partner pull-over, 123
 - 15. Knee shoulder stand, 133

(Reference: *Tumbling and Stunts for Girls* by Virginia Lee Horne,

A. S. Barnes & Co., Publishers. Numbers denote pages for description of stunts.)

23. **Volleyball (three tests):**

- Extend the service line across the court. Stand behind the service line on opposite side of the net. Serve 7 out of 10 attempts into the 5 foot space bordered by the service line and base line. Use official size court.
- Draw a line 8 feet from floor on wall. Start ball with serve. Volley ball 10 times in succession above the 8 foot line against the wall. Service counts as first of the 10 volleys. (Setting up not permitted.)
- Pass a rules test with a grade of at least 85%.

II. THE AWARDS

FIRST LOCAL AWARD

(Usually class numeral)

Given for 150 points.

SECOND LOCAL AWARD

(Usually school letter)

Given for a total of 250 points.

STATE AWARD

(A wall plaque)

Given for a total of 350 points.

(An additional award may be given at the option of the local association.)

Requirements for State Award

1. Girl must be a second semester junior or senior.
2. Must have passed a minimum of 10 tests covering 5 or more different activities.
3. School must have been a member of the League for two years or have paid back dues of one year.
4. Record of candidates' points must be in secretary's hand not later than April 1, each year.

APPENDIX C

Preschool football practice schedule

MONDAY *

- | | |
|-------|---------------------------------------|
| 8:30 | Meeting |
| 8:45 | Calisthenics |
| 9:00 | Stance and proper spacing |
| 9:20 | Shoulder block—all players on dummies |
| 9:45 | Wind sprints to 50 yards |
| 10:00 | Practice dismissed |
-
- | | |
|------|--|
| 8:00 | Meeting |
| 8:15 | Calisthenics |
| 8:30 | Stance and proper spacing—explain how offensive holes are numbered |
| 8:50 | Shoulder blocking—all players on dummies |
| 4:15 | Wind sprints 30 and 50 yards |
| 4:30 | Practice dismissed |

TUESDAY

- | | |
|-------|-------------------------------------|
| 8:30 | Meeting |
| 8:45 | Calisthenics |
| 9:00 | Stance and starts |
| 9:15 | Shoulder and body blocks on dummies |
| 9:35 | Tackle dummies |
| 9:50 | Wind sprints—by positions |
| 10:00 | Practice dismissed |
-
- | | |
|------|---|
| 3:00 | Meeting |
| 3:15 | Calisthenics |
| 3:30 | Line work on stance and shoulder blocking. Backs work on handing off and receiving ball |
| 4:00 | Run play units |
| 4:30 | Practice dismissed |

WEDNESDAY

- | | |
|------|--------------------------------|
| 8:30 | Meeting |
| 8:45 | Calisthenics |
| 9:00 | Defensive stance and movements |

* Kenneth H. McCaffry, unpublished individual study project, Department of Physical Education for Men, Purdue University, 1953.

- 9:30 Line—shoulder blocking. Backs—receiving ball from quarterback
 9:45 Run plays as units
 9:55 Wind sprints by positions
 10:00 Practice dismissed
- 3:00 Meeting
 3:15 Calisthenics
 3:30 Defensive stance and movements
 3:45 Line divides in groups by positions and works on all type blocks. (Check stance.) Backs work on forward pass drills.
 4:00 Team #1 runs plays against #2—with line blocking and defense tagging. Team #3 runs offensive plays. Rotate teams every 10 minutes.
 4:30 Practice dismissed

THURSDAY

- 8:30 Meeting
 8:45 Calisthenics
 9:00 Guards and tackles practice pulling and going downfield. Backs and ends work on pass-cuts
 9:30 Divide all men into groups by position and then pair off and practice tackling
 9:50 Run plays in units
 10:00 Practice dismissed
- 3:00 Meeting
 3:15 Calisthenics
 3:30 Defensive formations and tackling
 3:45 Scrimmage—live blocking, no tackling. Rotate teams every 10 minutes
 4:30 Practice dismissed

FRIDAY

- 8:30 Meeting
 8:45 Calisthenics
 9:00 Work in units on pass and punt protection. Use dummies
 9:30 Kick-off formation for defense and offense
 10:00 Practice dismissed
- 3:00 Meeting
 3:15 Calisthenics
 3:30 Scrimmage Team #1 against #2. Divide team #3 into reserves for teams #1 and #2
 4:30 Practice dismissed

MONDAY

- 8:30 Meeting
 8:45 Calisthenics
 9:00 Pair off and practice tackling head-on and from both sides
 9:20 Backs work on receiving ball from quarterback. Line works on shoulder blocks

- 9:40 Teams #1 and #2 run plays against team #3 holding dummies.
Stress downfield blocking
9:55 Wind sprints
10:00 Practice dismissed
- 3:00 Meeting
3:15 Calisthenics
3:30 Show movements for five, six and seven man line defense
4:00 Teams #1 and #2 run pass cuts against team #3
4:20 All teams rotate working on covering punts and punt protection
4:30 Practice dismissed

TUESDAY

- 8:30 Meeting
8:45 Calisthenics
9:00 Line works on punt and pass protection. Backs work on pass defense
9:30 Teams rotate running plays against five, six, and seven man line defenses
9:55 Wind sprints
10:00 Practice dismissed
- 3:00 Meeting
3:15 Calisthenics
3:30 Guards and tackles work on pass protection blocking. Centers, ends and backs work on pass outs
4:00 All teams rotate on practicing extra point and field goal formation
4:25 Wind sprints
4:30 Practice dismissed

WEDNESDAY

- 8:30 Meeting
8:45 Calisthenics
9:00 All players pair off and practice tackling head-on and from both sides
9:20 Teams rotate on returning kick-offs
9:40 Run plays in units
10:00 Practice dismissed
- 3:00 Meeting
3:15 Calisthenics
3:30 Signal drills
3:45 Scrimmage
4:30 Practice dismissed

THURSDAY

- 8:30 Meeting
8:45 Calisthenics
9:00 Line works on pass protection. Backs work on pass defense
9:20 Teams #1 and #2 run pass cuts against team #3
9:40 Teams rotate working on kick-off returns
10:00 Practice dismissed

3:00 Meeting
 3:15 Calisthenics
 3:30 Guards and tackles work on pulling out and blocking downfield. Centers, ends and backs work on pass cuts
 4:00 Teams rotate and practice field goals and extra points
 4:20 Wind sprints
 4:30 Practice dismissed

FRIDAY

8:30 Meeting
 8:45 Calisthenics
 9:00 Teams work as units and practice punt and pass protection
 9:20 Kick-off formations and returns
 9:40 Signal drill
 10:00 Practice dismissed

3:00 Meeting
 3:15 Calisthenics
 3:30 Signal drill
 3:45 Scrimmage
 4:30 Practice dismissed

MONDAY

8:30 Meeting
 8:45 Calisthenics
 9:00 Tackling drill
 9:20 Line works on pass protection. Backs work on pass defense
 9:40 Signal drill
 9:55 Wind sprints
 10:00 Practice dismissed

3:00 Meeting
 3:15 Calisthenics
 3:30 Guards and tackles work on pulling out and blocking downfield. Backs, ends and centers work on pass cuts
 3:50 Teams rotate and practice defensive formations and movements
 4:15 Signal drill
 4:30 Practice dismissed

TUESDAY

8:30 Meeting
 8:45 Calisthenics
 9:00 Pair off and practice tackling
 9:20 Rotate teams on field goals, pass and punt protection
 9:40 Signal drills
 10:00 Practice dismissed

3:00 Meeting
 3:15 Calisthenics
 3:30 All players work on downfield blocking

3:50 Rotate teams on kick-offs and returns
4:10 Signal drill
4:25 Wind sprints
4:30 Practice dismissed

WEDNESDAY

8:30 Meeting
8:45 Calisthenics
9:00 Signal drills
9:15 Scrimmage
10:00 Practice dismissed

No afternoon practice

THURSDAY

8:30 Meeting
8:45 Calisthenics
9:00 Group by positions and practice defense movements
9:15 Teams #1 and #2 run pass cuts against team #3
9:40 Signal drill
10:00 Practice dismissed

3:00 Meeting
3:15 Calisthenics
3:30 Pair off and work on tackling
3:45 Divide into groups by position and practice their most important blocks
4:05 Rotate teams on kick-off and returns
4:20 Field goal protection
4:30 Practice dismissed

FRIDAY

8:30 Meeting
8:45 Calisthenics
9:00 Guards and tackles pull out and block downfield. Backs, ends and centers work on pass cuts
9:20 Rotate teams on pass, punt and field goal protection
9:40 Signal drill
10:00 Practice dismissed

3:00 Meeting
3:15 Calisthenics
3:30 Signal drill
3:45 Scrimmage
4:30 Practice dismissed

MONDAY

8:30 Meeting
8:45 Calisthenics
9:00 Rotate teams on pass protection

- 9:30 Rotate teams on kick-off and return
10:00 Practice dismissed

No afternoon practice

(After school practice preceding first game on coming Friday night)

TUESDAY

- 3:30 Meeting
3:45 Calisthenics
4:00 Divide into groups by position and practice important blocks
4:20 Rotate teams on defenses for coming game
4:50 Signal drill
5:00 Practice dismissed

WEDNESDAY

- 3:30 Meeting
3:45 Calisthenics
4:00 Signal drill
4:15 Scrimmage
5:00 Practice dismissed

THURSDAY

- 3:30 Meeting
3:45 Calisthenics
4:00 Rotate teams on defenses
4:15 Rotate teams on pass cuts
4:30 Rotate teams on kick-off and return
4:45 Signal drill
4:55 Practice dismissed

FRIDAY

CAME

APPENDIX D

Suggestions for the organization of girls sports organizations

I. Introduction:⁴

A. The girls sports organization in the secondary school should be responsible for the girls' program of physical recreational activities.

B. Types of organization:

1. Girls sports organizations may be effective in several forms such as sports clubs, recreational associations, girls athletic or sports associations.
2. Physical recreational activities may also be organized through the Girls League, Girls Leaders Club, Student Council, or through other existing school organizations which are responsible for recreational programs.

C. The program:

1. The program should fit into the recreational opportunities and facilities of the community and should be based on a good physical education program.
2. Opportunities should be provided to develop the leadership ability of the members.
3. The activities program should be planned by the girls sports organization council and the advisor. A good program should endeavor to present a wide variety of activities to meet the needs and interests of every individual interested in participating. Planning should be done with a view of adjusting the program to meet the capacities of the individual and at the same time help girls to adjust to some of their special problems. A program which devotes the major portion of the year to one activity, such as basketball, fails to take into account the varying capacities and interests that exist in the group as a whole.
4. A well-rounded program can make a large contribution by providing for the development of those skills and interests which lie outside the student's immediate vocational objectives. These skills may have great carry-over value and become worthwhile recrea-

⁴ Committee of Girls Sports Organization, Marjorie E. Harrowell, chairman, National Section of Girls and Women's Sports, Washington, The American Association for Health, Physical Education, and Recreation, January 1955.

tional activities in later life. Therefore, every girl should be encouraged to take part in an activity which will lead to continued participation after school days are over.

5. Within the program, attempts should be made to assist girls in making proper social adjustments. There are many possibilities for creating an environment favorable to the development of happy social relationships. In learning to play together, there are certain feelings and exchanges of ideas that are very significant. Through membership and participation on teams in intramural and extra-mural programs the girls experience the joy of success and have an opportunity to learn to accept defeat. By taking part in individual and team sports the individual is helped to feel "at home" in social situations. When girls play and cooperate with others, they develop a sense of belonging to a group which is very important in a large society. Through participation in sports, social gatherings, and business meetings, girls learn to make adjustment to the group thereby preparing themselves to meet life situations.

D. Girls sports organization advisor:

1. The advisor of any girls sports organization, regardless of organization, should be a person who has the ability to work with students and aid them in directing their organization—a person to whom students may turn for guidance. She is in a particularly favorable position to obtain intimate, informal and sympathetic relationships with the students. In informal contacts students tend to reveal personality traits and problems that are not otherwise evident. These traits are brought out in the conduct of the girls in the locker rooms, and in the close associations made through games and sports. Because of these facts, the advisor can give insight and assistance to the dean and counselors in working out case problems.
2. In considering a faculty advisor the following should be given consideration:
 - a. Does she have professional training in physical education?
 - b. Does she have the ability to work with students and aid them in directing their organization?
 - c. Does she understand the needs and problems of the high school age?
 - d. Does she have the confidence of the student body?
 - e. Does she have the interest to sacrifice time and energy for the organization?
3. The duties of the faculty advisor should include:
 - a. Attending meetings. The meetings should be conducted by the students with the faculty sponsor as an advisor.
 - b. Supervising the officers to see that they carry out their responsibilities.
 - c. Attending all social functions, games, special events and other activities which the girls sports organization sponsor.
 - d. Coordinating the activities of the girls sports organization with the rest of the school program.
 - e. Educating the officers, managers, captains, and chairmen to carry out their responsibilities.

II. Preliminary procedure for organizing a girls sports organization:

- A. First, find out if there is a need for such an organization or whether an existing organization could carry out the program.
- B. Have a meeting of a small group of girls who are vitally interested in organizing a girls sports organization either as a separate organization or working with an existing organization. Discuss and decide:
 1. Whether or not a separate organization is needed.
 2. The purpose of the organization.
 3. The activities in which they wish to participate.
 4. The relationship of these activities to the school government pattern.
 5. The need for, and schedule of, regular business meetings.
 6. On ways of financing the organization.
 7. The regulations relative to membership.
 8. The question of an advisor.
 9. The officers necessary for the organization.
 10. The plan for committee work on the election of officers and the drawing up of a constitution, or set of guiding rules.
- C. Call a meeting of all girls interested in belonging to such an organization and present the above ideas to them for discussion and action.

III. Purpose of the organization:

- A. What are the objectives of the organization?
 1. Development of leadership?
 2. Participation in physical and social recreation?
 3. Improvement of skill?
 4. Provision of an intramural program
 5. Provision for an extramural program through sports days and play days.
 6. Provision for co-recreational activities?

IV. Constitution:

- A. Is there a need for a constitution or will a set of regulations suffice?
- B. Consideration should be given to:
 1. Name.
 2. Object or purpose.
 3. Membership requirements.
 4. Financing.
 - a. Preferably by school funds.
 - b. By approved money raising activities.
 - c. By dues. This form of financing is not recommended as it may make it impossible for some girls to become members. Also, in some states it is illegal to require dues for membership in student organizations.

5. Meetings. What is the purpose of the meetings? Is a meeting once or twice a month necessary?
6. Officers and the executive council.
7. Election of officers.
8. Duties of officers.
9. Point system and awards.
10. Amendments.
11. By-laws.

V. Activities:

- A. What activities are possible within existing school and community facilities?

1. Organized activities:

a. Team sports:

Field hockey	Speed-a-way	Basketball
Soccer	Volleyball	Softball
Speedball	Field ball	Lacrosse

b. Individual and dual sports:

Archery	Horseshoes	Ice skating
Badminton	Roller skating	Swimming
Bowling	Tennis	Table tennis
Fencing	Golf	Deck tennis
Handball	Pullery	

c. Track and field events.

d. Stunts and tumbling.

e. Rhythmical activities.

Modern dance	Social dance
Square and folk dance	Tap dance

2. Unorganized activities:

Bicycling	Golf	Roller and ice skating
Boating-canoeing and sailing	Hiking	Skiing
Bowling	Horseback riding	Swimming
Deck tennis	Horseshoes	Table tennis
	Shuffleboard	Tennis

3. Achievement and skill tests (These are exclusive of the tests given in physical education classes as a part of class requirements. Many schools do not include tests in their recreational programs since they may violate the principle of equal opportunity for all and are not recreational in nature.):

- a. Tests in various activities which are offered.
- b. Written and practical tests for ratings of officials.
- c. American Red Cross swimming and life saving tests.
- d. Other standardized tests.

5. Awards, if given, should have little monetary value. Numerals, school letters, stars or chevrons, pins, and wall plaques are most frequently used.

B. Consider the following regarding a point system:

1. If awards are to be given, a point system should be established which will encourage participation of all members and insure all equal opportunities for earning awards.
2. Provisions should be made for physically-handicapped girls whereby they may receive points for activities within their physical capabilities and for such assistance as scoring, timing, coaching on rules, officiating, care of equipment and so on.
3. The purpose of the organization will determine whether points are to be awarded for:
 - a. Participation alone.
 - b. Participation and achievement.
4. If the sole purpose of the girls sports organization is recreation and leadership, in other words, participation, points will be given for participation alone. In this type of organization generally points are given by one of the following methods:
 - a. The maximum number of points is given for participation in two-thirds or three-fourths of the sessions devoted to a particular activity. No points are earned for lesser participation.
 - b. The maximum number of points is given for 100% participation, and a lesser number of points given for 75% and 50% participation in a particular activity.
5. If the purpose is twofold, participation and achievement, the major portion of the points are given for participation, the remainder for achievement.
6. It is usually easier to base the point system on 10 or 100 points for each activity rather than on other figures.
7. The method of awarding points should be simple and easily administered.
8. The organization and point system should encourage all around development by giving credit for a variety of activities.
9. The number of points needed for each award must be determined.
10. Inasmuch as the equipment and facilities are not the same in all schools, no attempt has been made to suggest a definite point system. Each organization should work out its own system if awards are to be given. All organizations should offer a varied program of activities. The choice of these activities will depend upon facilities, equipment, the girls' interests and needs, climate, community interests, and the training and ability of the advisor.

C. Consider the following regarding points:

1. Points may be given for:
 - a. Organized activities (see V, A, 1, page 284)
 - b. Unorganized activities (see V, A, 2, page 284)
 - c. Achievement and skill tests (see V, A, 3, page 284)
2. How many points should be given for each practice? For each activity?

3. For what period of time must an individual participate in unorganized activities before being eligible for points? Should this activity be continuous, that is, regular participation during a given period of time?
4. How shall the hours of unorganized activities be reported? How can these be supervised?
5. Should points be granted for activities participated in during the Thanksgiving, Christmas, or spring holidays and not during the summer?

VII. Transfer of students:

- A. When a student transfers to another school, she should be given her girls sports organization record to take with her. This should be a complete record of the points she has earned.
- B. Any student transferring from one school to another school in which awards are given should receive full credit for her former points toward the awards of the school to which she transfers.

VIII. Teams and tournaments:

- A. The organization of teams and the type of tournament selected for participation will depend on the interests of the girls, facilities, the size of the group, the time available, and the activity.
- B. The teams should be so organized that they are of equal ability and should provide equal competition for all teams. The teams may be organized in various ways:
 1. A student-faculty committee may make the selection.
 2. A student committee may make the selection, subject to the approval of the advisor.
 3. Captains or sports managers may make the selection, subject to the approval of the advisor.
 4. Class teams may be used.
- C. Care should be taken so that team membership varies for the different sports.
- D. Tournaments should be planned so that the games are scheduled for maximum participation by all.
 1. If time and facilities permit, the round robin tournament is the most effective.
 2. If time and facilities are limited, a ladder tournament, or a single or double elimination tournament may be used.
- E. Consideration should be given to the organization of non-competitive activities.
- F. Activities should be conducted according to the standards recommended by the National Section for Girls and Women's Sports.

IX. Officiating:**A. Student officials:**

1. Student officials generally are utilized in those sports requiring an official.
2. They should be trained and rated through use of written and practical tests administered by the advisor, or by the local WNORC Rating Board.

(Note: Intramural, associate, and junior national rating may be earned in basketball, softball, and volleyball by high school girls who meet the requirements for these ratings. The WNORC intramural written and practical examinations in a particular sport can be given by a qualified woman leader who is teaching that sport. Local Boards in your area will be glad to help you in training and rating officials.)

APPENDIX E

Larson's muscular strength test

STEP I:* Use a horizontal bar set at such a height that subject's feet do not touch the floor at any time during the test. The subject hangs from the bar, using either the forward or the reverse grip. The subject pulls up until chin is over bar. Lower to hanging position, arms perfectly straight. Continue as long as possible. Partial chins do not count. Count one point for each full chin. No kipping, kicking, swinging, or resting allowed. Record the number of points and have the subject rest 10 minutes before proceeding to Step II (dipping).

STEP II: Adjust parallel bars to shoulder height. The subject jumps to an arm-rest position at the end of the parallel bars with the arms fully extended. From this position, the subject lowers the body to a right angle arm-bend position. Push up to arm-rest position and continue dipping as long as possible. Partial dips do not count. One point is scored for each full dip plus one point for the initial jump into first position. No kipping, kicking, swinging, or resting is allowed. Record score.

STEP III (Preferred equipment—MacCurdy Vertical Jump-meter): The subject stands as close to the wall as possible with both arms extended upward, feet flat on floor. A chalk mark is made at the maximum reach at tip of fingers for each hand. A line is drawn between these two points. Subject stands with either side to the wall. Chalk dust is placed on middle finger of hand nearest wall. The subject jumps as high as possible and touches board at maximum height of jump. For scoring, measure distance between the chalk marks for the reach and the jump. Record the maximum jump to the nearest half inch, since the test is administered three times.

SCORING: Using the following table (page 290) and a record form, obtain scores and classification index. The steps of procedure are as follows:

1. Change raw scores into weighted standard scores.
2. Sum weighted standard scores. (This gives index score.)
3. Determine classification.

* Leonard A. Larson and Rachel D. Yocom, *Measurement and Evaluation in Physical Health and Recreation Education* (St. Louis, The C. V. Mosby Company, 1951, p. 97).

SCORING TABLE FOR LARSON'S STRENGTH TEST^a
(COLLEGE MEN: 17-24)

Vertical jump		Vertical jump		Dips		Chinning	
Raw score	Std. X2.27	Raw score	Std. X2.27	Raw score	Std.X 1.00	Raw score	Std.X 1.00
20.0	227	17.8	125	30	109	30	270
25.8	225	17.0	123	29	100	29	267
25.8	222	17.4	120	28	104	28	259
25.4	220	17.2	118	27	101	27	252
25.2	210	17.0	116	28	98	20	244
25.0	213	16.8	114	25	95	25	235
24.8	211	16.8	111	24	92	24	227
24.0	209	16.4	107	23	89	23	220
24.4	207	16.2	104	22	87	22	212
24.2	204	16.0	102	21	84	21	204
24.0	202	15.8	100	20	81	20	197
23.8	200	15.0	98	19	78	19	189
23.6	197	15.4	95	18	75	18	180
23.4	195	15.2	93	17	72	17	174
23.2	193	15.0	91	16	70	10	165
23.0	188	14.8	69	15	67	15	157
22.8	180	14.0	66	14	64	14	148
22.6	184	14.4	84	13	61	13	142
22.4	182	14.2	70	12	58	12	134
22.2	179	14.0	77	11	55	11	125
22.0	177	13.8	75	10	52	10	110
21.8	175	13.0	73	9	50	9	110
21.8	173	13.4	70	8	47	8	102
21.4	170	13.2	68	7	44	7	95
21.2	168	13.0	66	6	41	6	87
21.0	166	12.8	64	5	38	5	78
20.8	181	12.8	81	4	35	4	72
20.6	159	12.4	59	3	33	3	64
20.4	157	12.2	57	2	30	2	55
20.2	154	12.0	54	1	27	1	47
20.0	152	11.8	50				
19.8	150	11.0	48				
19.6	148	11.4	45				
10.4	145	11.2	43				
19.2	143	11.0	41				
19.0	141	10.8	39				
18.8	138	10.8	36	9.6	23	8.6	11
18.6	134	10.4	34	9.4	20	8.4	9
18.4	132	10.2	32	9.2	18	8.2	7
18.2	129	10.0	27	9.0	10	8.0	5
18.0	127	9.8	25	8.8	14		

$$\text{Standard score} = \frac{14(x - m)}{\sigma} \times 50$$

^a *Ibid.*, p. 475.

Bookwalter's calibration of the Larson test for high school use⁷

Score	Class A up to 674	Class B 675-709	Class C 710-744	Class D 745-779	Class E 780-814	Class F 815-849	Class G 850-884	Class H 885 up
100	257	291	311	357	394	422	428	510
99	254	285	308	354	390	418	424	505
98	251	279	305	350	377	414	420	500
97	249	278	302	348	373	410	418	496
96	246	277	299	343	369	408	412	491
95	244	276	295	345	365	402	408	486
94	241	275	292	342	362	398	404	481
93	239	274	290	340	360	394	400	476
92	238	273	289	339	354	390	390	471
91	236	272	288	338	350	386	386	466
90	235	271	287	337	350	382	382	461
89	233	270	286	335	347	378	384	456
88	231	269	284	334	345	374	380	451
87	229	268	283	333	343	370	376	448
86	228	267	282	332	342	369	372	441
85	226	266	281	331	341	368	368	436
84	225	265	280	330	340	367	367	428
83	223	264	279	329	339	366	364	426
82	222	263	278	328	338	365	365	422
81	220	262	277	327	337	364	364	417
80	218	261	276	326	336	363	363	412
79	215	260	275	325	335	362	362	407
78	213	259	274	324	334	361	361	402
77	210	258	273	323	333	360	360	397
76	207	257	272	322	332	359	359	392
75	205	256	271	321	331	358	358	387
74	202	255	270	320	330	357	357	377
73	200	254	269	319	329	356	356	372
72	197	253	268	318	328	355	355	367
71	195	252	267	317	327	354	354	362
70	192	251	266	316	326	353	353	359
69	189	250	265	315	325	352	352	355
68	187	249	264	314	324	351	351	351
67	184	248	263	313	323	350	350	348
66	182	247	262	312	322	349	349	346
65	179	246	261	311	321	348	348	344
64	177	245	260	310	320	347	347	340
63	174	244	259	309	319	346	346	337
62	171	243	258	308	318	345	345	331
61	169	242	257	307	317	344	344	329
60	167	241	256	306	316	343	343	321
59	165	240	255	305	315	342	342	317
58	163	239	254	304	314	341	341	313
57	160	238	253	303	313	340	340	309
56	159	237	252	302	312	339	339	305
55	157	236	251	301	311	338	338	301
54	155	235	250	300	310	337	337	297
53	153	234	249	299	309	336	336	293
52	151	233	248	298	308	335	335	291
51	149	232	247	297	307	334	334	287
50	147	231	246	296	306	333	333	285
49	145	230	245	295	305	332	332	284
48	143	229	244	294	304	331	331	281
47	141	228	243	293	303	330	330	279
46	139	227	242	292	302	329	329	277
45	137	226	241	291	301	328	328	275
44	135	225	240	290	300	327	327	272
43	133	224	239	289	299	326	326	269
42	131	223	238	288	298	325	325	268
41	129	222	237	287	297	324	324	266
40	127	221	236	286	296	323	323	264
39	125	220	235	285	295	322	322	263
38	123	219	234	284	294	321	321	261
37	121	218	233	283	293	320	320	259
36	119	217	232	282	292	319	319	257
35	117	216	231	281	291	318	318	255
34	115	215	230	280	290	317	317	253
33	113	214	229	279	289	316	316	251
32	111	213	228	278	288	315	315	248
31	109	212	227	277	287	314	314	246
30	107	211	226	276	286	313	313	244
29	105	210	225	275	285	312	312	242
28	103	209	224	274	284	311	311	240
27	101	208	223	273	283	310	310	238
26	99	207	222	272	282	309	309	237
25	97	206	221	271	281	308	308	235
24	95	205	220	270	280	307	307	233
23	93	204	219	269	279	306	306	231
22	91	203	218	268	278	305	305	229
21	89	202	217	267	277	304	304	227
20	87	201	216	266	276	303	303	225
19	85	200	215	265	275	302	302	223
18	83	199	214	264	274	301	301	221
17	81	198	213	263	273	300	300	219
16	79	197	212	262	272	299	299	217
15	77	196	211	261	271	298	298	215
14	75	195	210	260	270	297	297	213
13	73	194	209	259	269	296	296	211
12	71	193	208	258	268	295	295	209
11	69	192	207	257	267	294	294	207
10	67	191	206	256	266	293	293	205
9	65	190	205	255	265	292	292	204
8	63	189	204	254	264	291	291	203
7	61	188	203	253	263	290	290	202
6	59	187	202	252	262	289	289	201
5	57	186	201	251	261	288	288	200
4	55	185	200	250	260	287	287	199
3	53	184	199	249	259	286	286	198
2	51	183	198	248	258	285	285	197
1	49	182	197	247	257	284	284	196
0	47	181	196	246	256	283	283	195

Class A		Class B		Class C		Class D		Class E		Class F		Class G		Class H	
up to 674	Score	up to 675-709	Score	710-741	Score	745-779	Score	780-814	Score	815-849	Score	850-884	Score	885 up	Score
63	100	167	184	201	219	220	233	233	233	239	243	253	269	288	338
64	163	181	191	197	215	222	235	235	235	241	247	253	265	285	328
65	158	178	188	194	214	221	234	235	235	241	247	253	265	285	323
66	156	175	185	192	211	219	230	237	237	243	249	255	263	283	318
67	153	172	182	189	204	210	220	227	227	233	239	245	251	271	313
68	150	169	178	186	204	210	219	225	225	231	237	243	251	270	313
69	148	168	176	184	202	209	217	223	223	229	235	241	249	269	303
70	145	163	173	172	190	197	204	212	212	218	224	230	238	258	300
71	143	160	169	171	189	195	201	208	208	214	220	226	234	254	299
72	140	157	166	170	188	193	199	205	205	211	217	223	230	249	295
73	139	151	160	163	180	186	193	199	199	205	211	217	224	244	294
74	135	148	156	163	180	188	196	202	202	208	214	220	227	247	293
75	133	145	154	160	178	185	193	199	199	205	211	217	224	243	292
76	132	143	153	160	177	184	191	197	197	203	209	215	222	242	291
77	130	140	149	156	174	181	188	194	194	200	206	212	219	239	290
78	129	139	148	155	173	180	187	193	193	199	205	211	218	238	289
79	127	137	146	153	171	178	185	191	191	197	203	209	216	236	288
80	125	135	144	152	169	176	183	189	189	195	201	207	214	234	287
81	123	133	143	150	167	174	181	187	187	193	199	205	212	232	286
82	120	130	139	147	164	171	178	184	184	190	196	202	209	229	285
83	119	129	138	146	163	170	177	183	183	189	195	201	208	228	284
84	117	117	127	135	152	159	166	172	172	178	184	190	197	217	283
85	116	116	126	134	151	158	165	171	171	177	183	189	196	216	282
86	114	114	124	132	149	156	163	169	169	175	181	187	194	214	281
87	112	112	121	129	146	153	160	166	166	172	178	184	191	213	280
88	110	110	118	121	138	145	152	158	158	164	170	176	183	201	279
89	109	109	118	121	137	144	151	157	157	163	169	175	182	199	278
90	104	104	115	125	141	147	154	160	160	166	172	178	185	200	277
91	101	101	112	122	138	144	151	157	157	163	169	175	182	199	276
92	99	99	109	119	134	140	147	153	153	159	165	171	178	195	275
93	98	98	108	118	133	139	146	152	152	158	164	170	177	194	274
94	96	96	106	116	131	137	144	150	150	156	162	168	175	193	273
95	95	95	105	115	129	135	142	148	148	154	160	166	173	192	272
96	94	94	104	114	128	134	141	147	147	153	159	165	172	191	271
97	93	93	103	113	127	133	140	146	146	152	158	164	171	190	270
98	92	92	102	112	126	132	139	145	145	151	157	163	170	189	269
99	91	91	101	111	125	131	138	144	144	150	156	162	169	188	268
100	90	90	100	110	124	130	137	143	143	149	155	161	168	187	267

165	160	155	150	145	141	137	133	129	124	120	119	116	113	111	108	105	101	99	93	89	85	81	77	73	69	65	61	57	53	49	45	41	37	33	29	22
149	145	141	136	132	128	124	120	119	116	112	117	121	121	118	111	106	105	101	97	93	89	85	81	77	73	69	67	62	57	52	47	42	37	32	27	22
141	140	136	132	128	124	120	119	116	112	108	104	100	99	93	89	85	81	77	73	69	65	61	57	53	49	45	41	37	33	29	25	20				
122	118	114	110	107	103	99	95	92	89	84	80	77	73	69	65	62	58	54	51	47	43	40	39	32	29	25	21	18	14	10	7	3				
102	98	94	91	87	82	80	78	72	69	65	62	58	54	51	47	43	40	39	32	29	25	21	18	14	10	7	3									
80	87	84	81	77	74	71	68	65	62	58	55	52	49	46	43	39	36	33	30	27	24	20	17	14	11	8	5	2								
83	80	77	74	71	68	65	62	59	56	53	50	47	44	41	38	35	32	29	26	23	20	17	14	11	8	5	2									
75	73	70	68	65	62	60	57	55	52	49	47	44	42	39	37	34	31	29	26	24	21	18	16	13	11	8	5	3								
50	29	28	27	26	25	24	23	22	21	20	19	18	17	16	15	14	13	12	11	10	9	8	7	6	5	4	3	2	1							

¹ *Ibid.*, p. 477.

Table for Computing Classification Index*

Height in inches	Age in Years and half years																
	9	9.5	10	10.5	11	11.5	12	12.5	13	13.5	14	14.5	15	15.5	16	16.5	17
48	468	476	484	492	499	508	518	526	535	548	558	568	576	588	598	608	628
49	474	481	489	496	504	514	524	534	541	554	561	574	581	594	604	611	624
50	480	489	496	506	510	519	529	539	540	553	560	570	576	586	596	610	634
51	486	496	500	510	519	526	536	540	549	560	566	570	576	586	596	620	646
52	492	502	512	522	532	542	552	562	572	582	592	602	612	622	632	612	652
53	498	508	518	528	538	548	558	568	578	588	598	608	618	628	638	613	653
54	504	514	524	534	544	554	564	574	584	594	604	614	624	634	644	611	654
55	510	520	530	540	550	560	570	580	590	600	610	620	630	640	650	610	670
56	516	526	536	546	556	566	576	586	596	606	616	626	636	646	656	616	676
57	522	532	542	552	562	572	582	592	602	612	622	632	642	652	662	622	682
58	528	538	548	558	568	578	588	598	608	618	628	638	648	658	668	638	688
59	534	544	554	564	574	584	594	604	614	624	634	644	654	664	674	634	694
60	540	550	560	570	580	590	600	610	620	630	640	650	660	670	680	640	700
61	546	556	566	576	586	596	606	616	626	636	646	656	666	676	686	656	716
62	552	562	572	582	592	602	612	622	632	642	652	662	672	682	692	662	722
63	558	568	578	588	598	608	618	628	638	648	658	668	678	688	698	668	738
64	564	574	584	594	604	614	624	634	644	654	664	674	684	694	704	714	744
65	570	580	590	600	610	620	630	640	650	660	670	680	690	700	710	720	750
66	576	586	596	606	616	626	636	646	656	666	676	686	696	706	716	726	756
67	582	592	602	612	622	632	642	652	662	672	682	692	702	712	722	732	762
68	588	598	608	618	628	638	648	658	668	678	688	698	708	718	728	738	768
69	594	604	614	624	634	644	654	664	674	684	694	704	714	724	734	744	774
70	600	610	620	630	640	650	660	670	680	690	700	710	720	730	740	750	780
71	606	616	626	636	646	656	666	676	686	696	706	716	726	736	746	756	786
72	612	622	632	642	652	662	672	682	692	702	712	722	732	742	752	762	792
73	618	628	638	648	658	668	678	688	698	708	718	728	738	748	758	768	798
74	624	634	644	654	664	674	684	694	704	714	724	734	744	754	764	774	804
75	630	640	650	660	670	680	690	700	710	720	730	740	750	760	770	780	810
76	636	646	656	666	676	686	696	706	716	726	736	746	756	766	776	786	816
77	642	652	662	672	682	692	702	712	722	732	742	752	762	772	782	792	822
78	648	658	668	678	688	698	708	718	728	738	748	758	768	778	788	798	828

To use this table to compute Classification Index 1, find the number below the age reckoned to the last half year, and to the right of the height taken at the last full inch, and add this to the weight, e.g., if the individual is 16 years and four months old, 66.7 inches tall and weighs 121 pounds, the result will be $71.8 + 121 = 637$, which is his Classification Index 1. All ages of 17 or more are calculated as for 17 years.

* Raymond A. Weiss and Marjorie Fullings, *Administration of Tests in Physical Education* (St. Louis: The C. V. Mosby Company, 1954), p. 158.

**BOOKWALTER ACHIEVEMENT SCALES FOR THE LARSON TEST ON THE
SECONDARY SCHOOL LEVEL**

STEP I: Calculate the McCloy Classification value *

$$CI = 20 \text{age} + 6 \text{height} + \text{weight}$$

age = years (after 17, value remains 17)

height = inches

weight = pounds

STEP II: Determine classification:

Class	Score
A	Up to 674
B	675-709
C	710-744
D	745-779
E	780-814
F	815-849
G	850-884
H	885-UP

STEP III: Administer Larson Strength Test and score results:

STEP IV: Determine Achievement—Bookwalter Norms:

STEP V: Determine classification:

Point range	Classification
81-100	A or superior
61-80	B or good
46-60	C or average
21-40	D or poor
0-20	F or inferior

* Leonard A. Larson and Rachel D. Yocum, *op. cit.*, p. 476.

APPENDIX G

*Football playing ability
and attitude rating scale*

Name of rater	Date			Name of ratee	
<i>Condition¹⁰</i>					
6	5	4		3	2
Excellent shape; plays hard every minute, good wind.	Fair shape; must take a breather now and then.			Can't keep up; obviously in poor condition.	1
<i>Aggressiveness</i>					
6	5	4		3	2
Very aggressive; the first to start work; always tries hard; never quits.	Quits when he could have made a block or tackle; never eager to go to work.			Half-heartedly tries to block or tackle; last man to go to work.	1
<i>Persistence</i>					
6	5	4		3	2
Constantly works to improve fundamentals and condition.	Works only when coaches are near.			Seldom tries to improve self.	1
<i>Team play</i>					
6	5	4		3	2
Always plays for the team to win; never thinks of his own glory.	Plays to suit himself, not for team as a whole.			Plays for the fans or for personal publicity or gain.	1
<i>Attitudes toward coaches</i>					
6	5	4		3	2
Listens to coaches at all times; carries out their instructions.	Listens to coaches, but does as he pleases.			Does not listen to the coaches.	1

¹⁰ Adapted by David H. Hardy from Kenneth L. Meyer.

Plays position

6	5	4	3	2	1
Knows every duty well; should be first string easily.	Average; does a steady job.		Can't carry out requirements of position.		

Blocking

6	5	4	3	2	1
Skilled; accurate; good body control.	Average; does a steady job.		Unreliable; can't handle body; misses key blocks.		

Tackling

6	5	4	3	2	1
Vicious and deadly; they stay tackled.	Will usually get his share.		Tackles half-heartedly.		

Football "know-how"

6	5	4	3	2	1
Analyzes in a hurry; knows what to do when defensive and offensive situations change.	Slow to realize situation has changed; misses blocks or defensive shifts.		Never makes adjustments to new situations.		

Wear attitude inventory

*Directions—please read carefully:¹¹ Below you will find some statements about physical education. We would like to know how you feel about each statement. You are asked to consider physical education *only* from the standpoint of its place as an activity course taught during a regular class period. No reference is intended in any statement to interscholastic or intramural athletics. People differ widely in the way they feel about each statement. There are no right or wrong answers.*

You have been provided with a separate answer sheet for recording your reaction to each statement. Read each statement carefully, go to the answer sheet, and opposite the number of the statement place an "x" in the square which is under the word (or words) that best expresses your feeling about the statement. After reading a statement you will know at once, in most cases, whether you agree or disagree with the statement. If you agree, then decide whether to place an "x" under "agree" or "strongly agree." If you disagree, then decide whether to place the "x" under "disagree" or "strongly disagree." In case you are undecided (or neutral) concerning your feeling about the statement, then place an "x" under "undecided." Try to avoid placing an "x" under "undecided" in very many instances.

Wherever possible, let your own personal experience determine your answer. Work rapidly, do not spend much time on any statement. This is not a test but simply a survey to determine how people feel about physical education. Your answers will in no way affect your grade in any course. In fact, we are not interested in connecting any person with any paper—so please answer each statement as you actually feel about it. Be sure to answer every statement.

ATTITUDE SCALE (Form A)

1. If for any reason a few subjects have to be dropped from the school program, physical education should be one of the subjects dropped.
2. Physical education activities provide no opportunities for learning to control the emotions.
3. Physical education is one of the more important subjects in helping to establish and maintain desirable social standards.
4. Vigorous physical activity works off harmful emotional tensions.
5. I would take physical education only if it were required.
6. Participation in physical education makes no contribution to the development of poise.

¹¹ Carlos B. Wear, "Construction of Equivalent Forms of an Attitude Scale," *Research Quarterly*, March 1955, p. 113.

7. Because physical skills loom large in importance in youth, it is essential that a person be helped to acquire and improve such skills.
8. Calisthenics taken regularly are good for one's general health.
9. Skill in active games or sports is not necessary for leading the fullest kind of life.
10. Physical education does more harm physically than it does good.
11. Associating with others in some physical education activity is fun.
12. Physical education classes provide situations for the formation of attitudes which will make one a better citizen.
13. Physical education situations are among the poorest for making friends.
14. There is not enough value coming from physical education to justify the time consumed.
15. Physical education skills make worthwhile contributions to the enrichment of living.
16. People get all the physical exercise they need in just taking care of their daily work.
17. All who are physically able will profit from an hour of physical education each day.
18. Physical education makes a valuable contribution toward building up an adequate reserve of strength and endurance for everyday living.
19. Physical education tears down sociability by encouraging people to attempt to surpass each other in many of the activities.
20. Participation in physical education activities makes for a more wholesome outlook on life.
21. Physical education adds nothing to the improvement of social behavior.
22. Physical education class activities will help to relieve and relax physical tensions.
23. Participation in physical education activities helps a person to maintain a healthful emotional life.
24. Physical education is one of the more important subjects in the school program.
25. There is little value in physical education as far as physical well-being is concerned.
26. Physical education should be included in the program of every school.
27. Skills learned in a physical education class do not benefit a person.
28. Physical education provides situations for developing desirable character qualities.
29. Physical education makes for more enjoyable living.
30. Physical education has no place in modern education.

ATTITUDE SCALE (Form B)

1. Associations in physical education activities give people a better understanding of each other.
2. Engaging in vigorous physical activity gets one interested in practicing good health habits.
3. The time spent in getting ready for and engaging in a physical education class could be more profitably spent in other ways.
4. A person's body usually has all the strength it needs without participation in physical education activities.

5. Participation in physical education activities tends to make one a more socially desirable person.
6. Physical education in schools does not receive the emphasis that it should.
7. Physical education classes are poor in opportunities for worthwhile social experiences.
8. A person would be better off emotionally if he did not participate in physical education.
9. It is possible to make physical education a valuable subject by proper selection of activities.
10. Developing a physical skill brings mental relaxation and relief.
11. Physical education classes provide nothing which will be of value outside the class.
12. There should not be over two one-hour periods per week devoted to physical education in schools.
13. Belonging to a group, for which opportunity is provided in team activities, is a desirable experience for a person.
14. Physical education is an important subject in helping a person gain and maintain all-round good health.
15. No definite beneficial results come from participation in physical education activities.
16. Engaging in group physical education activities is desirable for proper personality development.
17. Physical education activities tend to upset a person emotionally.
18. For its contributions to mental and emotional well-being physical education should be included in the program of every school.
19. I would advise anyone who is physically able to take physical education.
20. As far as improving physical health is concerned a physical education class is a waste of time.
21. Participation in physical education class activities tends to develop a wholesome interest in the functioning of one's body.
22. Physical education classes give a person an opportunity to have a good time.
23. The final mastering of a certain movement or skill in a physical education class brings a pleasurable feeling that one seldom experiences elsewhere.
24. Physical education contributes little toward the improvement of social behavior.
25. Physical education classes provide values which are useful in other parts of daily living.
26. Physical education should be required for all who are physically able to participate.
27. The time devoted to physical education in schools could be more profitably used in study.
28. The skills learned in a physical education class do not add anything of value to a person's life.
29. Physical education does more harm socially than good.

Scale for evaluating girls' attitudes

(Check each item in the appropriate column in terms of your agreement or disagreement with the statement)¹²

Agree	Dis-agree	No.	Statements
		1.	I have about as much fun playing alone as I do in a group.
		2.	It makes no difference to me whether I win or lose in a game.
		3.	I like to bathe after playing hard.
		4.	It would make me very uncomfortable to have anyone around while I take a shower.
		5.	I do not mind having other girls around while I am taking a shower.
		6.	It is a waste of time to bathe after playing hard.
		7.	It is dangerous for most girls to take a shower during the menstrual period.
		8.	Games with running and jumping are healthful for most girls.
		9.	One kind of a game is as good as another.
		10.	Being a leader in a group is not important.
		11.	Dancing is a necessary part of every girl's education.
		12.	If there is a chance of being hurt in a game, I would rather not play.
		13.	It is dangerous to swim with other girls in a pool.
		14.	I feel that I should never take a shower during my menstrual period.

¹² Adapted from Martha G. Carr, "The Relationship Between Success in Physical Education and Selected Attitudes Expressed in High School Freshmen Girls," *Research Quarterly*, October 1945, pp. 176-191.

Agree	Dis-agree	No.	Statements
		15.	I would not mind having other girls around when I take a shower.
		16.	I would rather take a low grade if it is passing than work hard for a high grade.
		17.	I feel that other people have no right to tell me what to do.
		18.	I like games that have lots of vigorous activity in them.
		19.	Girls should play games that are not very strenuous.
		20.	I would be willing to play with girls of a different race or color, especially if they had no one else to play with.
		21.	I feel that it makes no difference what kind of clothes one plays in.
		22.	There is more than a small chance of catching a disease in shower rooms.

The items listed, when scored in terms of all items, were statistically significant in distinguishing students who received A in physical education from those who received D. The grading bases included objective skill and athletic achievement tests.

Scoring. The per cent of the undesirable attitudes for each individual was subtracted from the per cent of desirable attitudes held by the same individual. In the preceding adapted scale the desirable items are 3, 5, 8, 11, 15, 18, 20, 22. The undesirable items are 1, 2, 4, 6, 7, 9, 10, 12, 13, 14, 16, 17, 19, 21.

To disagree with a desirable item represents an undesirable attitude. Similarly, to agree with an undesirable item represents an undesirable attitude. Conversely, agreement with desirable items represents a desirable attitude and disagreement with an undesirable item represents a desirable attitude.

Students with undesirable attitude scores should receive special guidance and effort to "See through themselves so they might see themselves through!"

*Cowell social adjustment index*Form A¹²

Date: _____ Grade: _____

School: _____ Age: _____

Describer: _____

Last name

First name

Instruction: Think carefully of the student's behavior in group situations; check each behavior trend according to its degree of descriptiveness.

Behavior trends	Description of the student			
	Markedly (+3)	Somewhat (+2)	Only slightly (+1)	Not at all (+0)
1. Enters heartily and with enjoyment into the spirit of social intercourse.				
2. Frank, talkative and sociable, does not stand on ceremony.				
3. Self-confident and self-reliant, tends to take success for granted, strong initiative, prefers to lead.				
4. Quick and decisive in movement, pronounced or excessive energy output.				
5. Prefers group activities, work or play, not easily satisfied with individual projects.				
6. Adaptable to new situations, makes adjustments readily, welcomes change.				
7. Is self-composed, seldom shows signs of embarrassment.				
8. Tends to elation of spirits, seldom gloomy or moody.				
9. Seeks a broad range of friendships, not selective or exclusive in games and the like.				
10. Hearty and cordial, even to strangers, forms acquaintanceships very easily.				

¹² Charles C. Cowell, "An Abstract of a Study of Differentials in Junior High School Boys Based on the Observation of Physical Education Activities," *Research Quarterly*, December 1935, pp. 129-138.

FORM B

Date: _____ Grade: _____

School: _____ Age: _____

Descriptor: _____

Last name _____ First name _____

Instruction: Think carefully of the student's behavior in group situations; check each behavior trend according to its degree of descriptiveness.

<i>Behavior trends</i>	<i>Descriptive of the student</i>			
	<i>Markedly (-3)</i>	<i>Somewhat (-2)</i>	<i>Only slightly (-1)</i>	<i>Not at all (-0)</i>
<ol style="list-style-type: none"> 1. Somewhat prudish, awkward, easily embarrassed in his social contacts. 2. Secretive, seclusive, not inclined to talk unless spoken to. 3. Lacking in self-confidence and initiative, a follower. 4. Slow in movement, deliberative or perhaps indecisive. Energy output moderate or deficient. 5. Prefers to work and play alone, tends to avoid group activities. 6. Shrinks from making new adjustments, prefers the habitual to the stress of re-organization required by the new. 7. Is self-conscious, easily embarrassed, timid or "bashful". 8. Tends to depression, frequently gloomy or moody. 9. Shows preference for a narrow range of intimate friends and tends to exclude others from his association. 10. Reserved and distant except to intimate friends, does not form acquaintances readily. 				

The behavior trends in the preceding index were originally found to be valid in distinguishing junior high school boys who made good or poor social adjustments in physical education.

Forms A and B are negative equivalent forms with a permutation reliability coefficient of -.82. Factor analysis indicated that the items represent a social adjustment syndrome—all items being highly related to the sum total.

The tentative norms are based on the responses of groups of three teachers responding first to Form A and a week later to Form B. The total differential scores of Form A items minus the corresponding Form B items of each of the three teachers are added to give the raw score norms. A high plus score is indicative of good social adjustment; a minus score is indicative of poor social adjustment.

PERCENTILE SCALE

Raw score	zile score						
68	99.55	46	76.38	15	45.50	-21	17.51
61	99.10	45	77.03	14	45.04	-23	16.22
60	98.65	44	74.77	13	43.24	-25	15.32
79	98.20	43	73.42	12	41.44	-26	13.90
78	97.75	42	72.97	11	40.54	-27	12.30
77	97.30	41	72.52	10	40.09	-28	12.10
75	96.85	40	72.07	9	38.74	-29	11.71
74	96.40	38	71.17	8	37.64	-35	10.81
73	95.94	37	69.37	7	30.94	-36	9.91
72	95.50	30	68.47	0	35.59	-39	6.56
70	95.04	35	67.12	4	34.66	-40	6.11
68	94.59	34	65.32	3	33.33	-42	7.06
65	92.79	33	64.41	2	32.43	-43	7.21
63	92.34	32	63.51	1	30.63	-44	0.78
62	91.44	31	61.26	-1	29.73	-45	8.31
61	90.54	30	59.91	-2	28.38	-40	5.40
60	90.09	29	59.01	-3	27.48	-47	4.50
59	69.19	28	57.21	-5	20.00	-49	4.05
58	68.29	27	56.31	-6	25.22	-50	3.60
57	66.49	26	55.40	-7	23.87	-54	3.15
56	66.04	25	54.95	-8	23.42	-55	2.70
55	65.14	24	53.60	-9	22.97	-58	1.80
54	64.23	23	52.70	-12	22.52	-61	1.35
52	63.33	22	51.80	-15	21.62	-62	.90
51	62.88	21	50.90	-18	21.17	-71	.45
50	62.43	20	50.45	-17	20.72	-73	.00
49	61.08	18	48.65	-16	10.82		
48	60.18	17	48.85	-19	18.92		
47	79.28	10	45.94	-20	18.47		

n = 222

APPENDIX K

Cowell personal distance scale

The Cowell Personal Distance Scale is derived from a ballot by means of which each student in a class indicates the personal distance at which he prefers to hold each of his classmates. The maximum distance is valued 7 and the minimum 1. The index of acceptance is determined by adding all of the weighted scores and dividing this sum by the number of ratings, e.g., if all 50 students checked a given student in the first column (into my family as a brother or sister) his index would be $50 \times 1 = 50 \div 50$ or 1.00. Dropping the decimal, his index would be 100 (a hardly likely index). The lower the index the greater the degree of acceptance by the group. When used for girls, the "him" would be changed to "her," and "brother" to "sister."

The playground and gymnasium provide the careful observer with numerous examples of behavior indicative of the pupil's social feeling and adjustment. The processes by which an individual becomes a participant in his group, adjusts to it, and builds some semblance of social conduct and personality is of concern to the physical education teacher. The search here is for means of quantitatively charting the student's degree of harmony with his social group and his social growth from year to year. This is important not only for evaluating the degree to which we are attaining our educational objectives but also for understanding and guiding individuals.

The concept of "personal distance" was suggested by the work of Emory S. Bogardus, who introduced the concept of "social distance" by developing a scale for measuring the degree of social acceptance or rejection of persons from various racial and ethnic groups.

The reliability coefficients in use average around .90. The scale has been validated by using a "Who's Who in My Group" test. The average positive correspondence correlation coefficient was .84. In this latter device, classmates respond to three sets of dichotomous situations. The three positive ones ask questions related to who in the group is good in games and chosen early, feels at home wherever he is, is not afraid to speak up in class discussion, doesn't mind meeting strangers, can talk easily with adults, is a good committee worker, and sticks to the job until it is finished. Responses were also made to three corresponding situations with negative items.

Grade	What to do	I would be willing to accept him:	As a very close pal	As a member of my gang or club	On my street as a next-door neighbor	Into my class at school	Into my school	Into my city
If you had full power to treat each student in this group as you feel, just how would you consider him? Just how near would you like to have him to your family? Every student should be checked in some one column. Circle your own name and be sure you check every student in one column only.								
1.	Stanley Whitaker	1	2	3	4	5	6	7
2.	James Sotherlin							
3.	Parvin Schriber							

PERCENTILE SCALE

Raw score	Percentile score	Raw score	Percentile score	Raw score	Percentile score	Raw score	Percentile score
159	99.34	285	72.85	369	45.70	420	20.53
181	98.68	259	72.18	371	45.03	421	19.87
173	98.01	294	70.20	375	44.37	422	19.20
196	97.35	295	68.87	376	43.71	423	17.22
200	96.69	300	68.21	377	43.05	425	16.56
205	94.04	311	65.58	378	41.06	426	15.89
210	93.38	312	64.90	379	40.40	428	15.23
211	92.71	315	64.24	380	39.74	429	14.57
219	92.05	319	62.91	381	38.41	431	13.91
220	91.39	321	61.59	382	37.75	433	13.24
222	90.73	327	60.93	384	37.09	434	12.58
233	90.07	329	60.26	385	36.76	435	11.92
237	89.40	331	59.60	386	35.10	439	11.25
240	88.74	333	58.94	389	34.44	445	10.60
252	88.08	335	57.82	390	33.77	455	9.93
256	88.75	338	58.29	391	33.11	457	9.27
257	84.10	344	54.97	392	32.45	469	7.95
259	83.44	347	54.30	395	31.79	470	7.26
260	82.78	351	53.64	396	31.12	471	8.82
285	82.12	352	52.98	398	30.46	482	5.96
286	81.46	353	51.60	400	29.80	495	5.30
287	50.79	354	50.33	405	28.49	498	4.64
271	79.47	355	49.67	412	25.83	500	3.97
274	78.81	357	49.01	415	25.18	503	1.89
281	76.16	359	48.34	416	24.50	509	1.32
282	75.50	361	47.68	417	23.84	511	.66
283	74.17	363	47.02	418	23.18	636	.00
284	73.51	366	46.36	419	21.19		

n = 151

McCloy chinning strength test

To use Table I, multiply the weight of the individual by the constant corresponding to the number of chins.¹⁴

TABLE I
Function X Chins

No. of Chins (or dips)	Multiply this by weight	No. of Chins (or dips)	Multiply this by weight
1	1.2697	21	1.9047
2	1.3924	22	1.9162
3	1.4697	23	1.9274
4	1.5263	24	1.9369
5	1.5730	25	1.9500
6	1.6110	26	1.9578
7	1.6450	27	1.9683
8	1.6744	28	1.9768
9	1.7010	29	1.9865
10	1.7250	30	1.9950
11	1.7498	31	2.0057
12	1.7684	32	2.0128
13	1.7862	33	2.0229
14	1.8032	34	2.0298
15	1.8210	35	2.0370
16	1.8352	36	2.0448
17	1.8513	37	2.0535
18	1.8648	38	2.0598
19	1.8741	39	2.0670
20	1.8900	40	2.0760

Table II has been computed to facilitate this computation for those who add more rapidly than they multiply. In this table the numbers at the extreme left represent the number of chins, and the figures in the other columns represent the f.C multiplied by the number at the head of the column. Suppose a boy who weighs 129 pounds chins eight times. One hundred twenty-nine pounds is made up of one hundred pounds plus twenty pounds plus nine pounds; there-

¹⁴ Charles H. McCloy, "A New Method of Scoring Chinning and Dipping," *Research Quarterly*, December 1931, pp. 140-141.

PULL-UP-STRENGTH TEST (Continued)

Weight	Age, Years																	
	11	11½	12	12½	13	13½	14	14½	15	15½	16	16½	17	17½	18			
138	202	205	209	212	215	217	219	220	222	224	227	229	232	233	234			
130	199	202	206	208	211	213	215	217	210	221	224	228	229	230	231			
134	195	199	203	205	208	210	212	214	210	218	221	223	228	227	228			
132	192	195	199	201	204	206	208	210	212	214	217	220	223	224	225			
130	189	192	198	193	201	202	204	206	209	211	214	217	220	221	222			
128	180	189	192	194	197	199	201	203	205	203	211	213	216	217	219			
126	183	186	189	191	194	193	167	193	201	205	208	210	213	214	216			
124	180	183	186	163	190	192	194	196	199	202	205	207	210	211	213			
122	176	179	182	184	187	188	190	192	195	198	201	204	207	209	210			
120	173	176	179	181	183	185	187	189	192	105	198	201	204	205	207			
118	170	172	175	177	150	181	183	186	189	102	195	198	201	202	204			
116	167	169	172	174	176	178	160	182	185	188	192	105	198	199	201			
114	164	166	169	171	173	174	176	179	182	185	169	102	195	196	198			
112	161	103	165	167	169	171	173	176	179	182	185	188	192	193	195			
110	158	160	162	164	166	167	169	172	175	178	182	185	189	100	192			
108	154	156	159	160	162	164	166	169	172	175	179	182	186	187				
106	151	153	155	157	159	160	162	165	168	172	176	179	183	184				
104	148	150	152	153	155	157	159	162	165	169	173	175	179					
102	145	146	148	150	152	153	155	158	162	165	169	172	176					
100	142	143	145	146	148	149	152	155	158	182	166	103						
98	139	140	142	143	145	146	149	151	155	159	163	166						
96	136	137	139	140	142	142	144	148	152	156	160							
94	133	133	133	130	138	139	141	144	148	152	157							
92	130	130	132	133	135	135	137	141	145	149								
90	120	127	128	129	131	132	134	137	142	140								
88	123	124	125	128	128	128	130	134	138									
86	120	120	122	122	124	125	127	130	135									
84	117	117	119	119	121	121	123	127										
82	114	113	115	115	117	118	120	123										
80	111	110	112	112	114	114	116											
78	107	107	108	108	110	111	113											
76	104	104	105	105	107	107												
74	101	100	102	101	103	104												
72	98	97	98	98	99													
70	95	94	93	94	96													
68	92	93	92	91														
66	88	87	88	88														
64	85	84	85															
62	82	81	81															
60	79	77																
Multi- plier	1.58	1.64	1.69	1.72	1.75	1.76	1.76	1.72	1.68	1.64	1.60	1.57	1.54	1.52	1.50			

APPENDIX M

Hewitt swimming achievement scales¹⁶

Rating	25 yd. flutter kick, polo ball	50 yd. crawl	Elementary backstroke	Glide relaxation side	Breast stroke
<i>High school boys</i>					
Superior	15 and below	27 and below	6 and below	6 and below	6 and below
Good	16-27	28-34	7-10	7-11	7-10
Average	28-42	35-45	11-18	12-17	11-17
Poor	43-85	48-59	19-30	18-28	18-28
Inferior	60 and up	60 and up	31 and up	29 and up	29 and up
<i>High school girls</i>					
Superior	24 and below	38 and below	6 and below	8 and below	8 and below
Good	25-31	37-45	7-10	7-10	7-9
Average	32-47	40-60	11-18	11-17	10-17
Poor	48-89	61-80	19-30	18-28	18-28
Inferior	90 and up	81 and up	31 and up	29 and up	29 and up

¹⁶ Jack E. Hewitt, "Achievement Scale Scores for High School Swimming," *Research Quarterly*, May 1949.

fore, to determine the total strength corresponding to this weight, first find out the total strength for each part of the weight and then add them together. Proceed as follows: find the number of chins in the first column, then to the right of this number (eight in this case) under column 1 will be found 1.6744. Multiply this by 100, which will give you 167.44. Then under 2 will be found 3.3458. Multiply this by 10 and the result is 33.458. Under 9 is 15.0696. Add these together as follows:

$$100 \times 1.6744 = 167.44$$

$$10 \times 3.3458 = 33.49$$

$$1 \times 15.0696 = 15.07$$

$$\text{Total pull-up strength} = 216.00$$

TABLE II

No. of chins	1	2	3	4	5	6	7	8	9
1	1.2697	2.5394	3.6091	5.0789	6.3483	7.0182	8.8870	10.1576	11.4273
2	1.3924	2.7818	4.1772	5.5696	6.9020	8.3514	9.7468	11.1302	12.5316
3	1.4697	2.9394	4.4091	5.8768	7.3465	8.8182	10.2870	11.7578	13.2273
4	1.5268	3.0536	4.5504	6.1072	7.6340	9.1008	10.6876	12.2144	13.7412
5	1.5730	3.1400	4.7100	6.2920	7.8050	9.4350	11.0110	12.5840	14.1570
6	1.6110	3.2220	4.8330	6.4440	8.0350	9.6660	11.2770	12.8850	14.4990
7	1.6450	3.2900	4.9350	6.5800	8.2250	9.8700	11.5150	13.1600	14.8050
8	1.6744	3.3488	5.0232	0.0970	6.3720	10.0404	11.7203	13.3952	15.0696
9	1.7010	3.4020	5.1030	6.6040	8.5050	10.2060	11.0070	13.0080	15.3000
10	1.7230	3.4500	5.1750	6.9000	8.6250	10.3500	12.0750	13.8000	15.5250
11	1.7463	3.4930	5.2404	6.9572	8.7340	10.4508	12.2276	13.9744	15.7212
12	1.7664	3.5328	5.2992	7.0058	8.8320	10.5084	12.3043	14.1312	15.8976
13	1.7862	3.5724	5.3588	7.1448	8.9010	10.7172	12.5034	14.2896	16.0758
14	1.8032	3.6004	5.4090	7.2128	9.0160	10.8102	12.6224	14.4258	16.2268
15	1.8210	3.6420	5.4630	7.2840	9.1050	10.9260	12.7470	14.5660	16.3890
16	1.8352	3.6704	5.5056	7.3408	9.1780	11.0112	12.8484	14.6810	16.5168
17	1.8513	3.7028	5.5539	7.4052	9.2583	11.1078	12.9591	14.8104	16.6617
18	1.8648	3.7296	5.5944	7.4592	9.3240	11.1888	13.0536	14.9184	16.7632
19	1.8741	3.7482	5.6223	7.4964	9.3705	11.2446	13.1187	14.9928	16.8669
20	1.8900	3.7800	5.6700	7.5600	9.4500	11.3400	13.2300	15.1200	17.0100
21	1.9047	3.8094	5.7141	7.6188	9.5235	11.4282	13.3329	15.2376	17.1423
22	1.9182	3.8324	5.7488	7.6648	9.5810	11.4972	13.4134	15.3296	17.2458
23	1.9274	3.8548	5.7822	7.7006	0.6370	11.5644	13.4918	15.4192	17.3466
24	1.9369	3.8738	5.8107	7.7476	9.6845	11.6214	13.5583	15.4952	17.4321
25	1.9500	3.9000	5.8500	7.8000	9.7500	11.7000	13.6500	15.6000	17.5500
26	1.9578	3.9156	5.8734	7.8312	9.7890	11.7488	13.7048	15.6824	17.6202
27	1.9683	3.9380	5.9049	7.8732	9.8415	11.8098	13.7781	15.7484	17.7147
28	1.9768	3.9538	5.9304	7.9072	9.8840	11.8808	13.8376	15.8144	17.7912
29	1.9865	3.9730	5.9595	7.9460	9.9325	11.9190	13.9055	15.8920	17.8785
30	1.9950	3.9900	5.9850	7.9800	9.9750	11.9700	13.9650	15.9600	17.9550
31	2.0057	4.0114	6.0171	8.0228	10.0285	12.0342	14.0309	16.0456	18.0513
32	2.0128	4.0256	6.0384	8.0512	10.0640	12.0768	14.0896	16.1024	18.1152
33	2.0229	4.0458	6.0687	8.0918	10.1145	12.1374	14.1603	16.1832	18.2061
34	2.0298	4.0598	6.0894	8.1192	10.1490	12.1788	14.2058	16.2384	18.2682
35	2.0370	4.0740	6.1110	8.1480	10.1850	12.2220	14.2500	16.2960	18.3350
36	2.0448	4.0896	6.1344	8.1792	10.2240	12.2688	14.3136	16.3584	18.4032
37	2.0535	4.1070	6.1603	8.2140	10.2675	12.3210	14.3745	16.4280	18.4815
38	2.0596	4.1192	6.1788	8.2384	10.2950	12.3576	14.4172	16.4768	18.5384
39	2.0670	4.1340	6.2010	8.2650	10.3350	12.4020	14.4690	16.5360	18.6030
40	2.0760	4.1520	6.2280	8.3040	10.3800	12.4580	14.5320	16.6080	18.6840

PULL-UP-STRENGTH TEST¹³

Pull-up-strength quotient = 100 (pull-up-strength/norm for age and weight)

Weight	Age, Years														
	11	11½	12	12½	13	13½	14	14½	15	15½	16	16½	17	17½	18
218									357	357	355	355	355	355	354
210									353	353	352	352	352	352	351
214									351	350	350	349	349	349	348
212									346	347	340	345	345	346	345
210									344	343	343	342	342	343	342
208									341	340	340	339	339	340	340
206									339	337	336	330	330	336	337
204									335	334	333	333	333	333	333
202									332	330	330	329	329	330	330
200									328	327	326	326	326	327	327
198									322	323	324	323	323	324	324
196									310	321	321	320	320	321	321
194									315	316	317	316	317	318	318
192									312	314	314	313	313	314	315
190									306	308	310	310	310	311	312
188									302	304	307	307	306	309	309
186									299	301	303	303	303	305	306
184									295	297	300	300	300	303	303
182									286	292	294	290	296	297	298
180									284	288	290	292	293	294	295
178									281	285	287	289	289	291	293
176									277	281	293	285	285	286	291
174									270	274	276	282	283	284	286
172									267	270	274	276	279	280	284
170									263	267	271	273	275	276	281
168									260	263	267	269	271	272	278
166									251	257	260	264	268	269	270
164									246	253	256	260	264	266	267
162									245	250	253	257	259	261	262
160									241	240	249	253	255	257	259
158									233	238	243	246	250	252	255
156									230	235	240	243	248	250	251
154									227	231	236	239	243	247	247
152									224	228	233	230	239	241	244
150									221	225	230	233	236	240	241
148									216	222	226	229	232	234	245
146									214	219	223	226	229	230	242
144									211	215	219	222	225	227	237
142									208	212	216	219	222	224	227
140									205	209	213	215	216	220	224

¹³ Charles H. McCloy and Norma D. Young, *Tests and Measurements in Health and Physical Education* (New York: Appleton-Century-Crofts, 1954), pp. 146-147.

PULL-UP-STRENGTH TEST (Continued)

Weight	Age, Years														
	11	11½	12	12½	13	13½	14	14½	15	15½	16	16½	17	17½	18
138	202	205	209	212	215	217	219	220	222	224	227	229	232	233	234
136	199	202	206	208	211	213	215	217	219	221	224	226	229	230	231
134	195	199	203	205	208	210	213	214	216	218	221	223	226	227	228
132	192	195	199	201	204	206	208	210	212	214	217	220	223	224	225
130	189	192	196	198	201	202	204	206	209	211	214	217	220	221	222
128	186	189	192	194	197	199	201	203	205	208	211	213	216	217	219
126	183	186	189	191	194	195	197	199	202	205	208	210	213	214	216
124	180	183	186	188	190	192	194	196	199	202	205	207	210	211	213
122	178	179	182	184	187	188	190	192	195	198	201	204	207	208	210
120	173	178	179	181	183	185	187	189	192	195	198	201	204	205	207
118	170	172	175	177	180	181	183	186	189	192	195	198	201	202	204
116	167	169	172	174	176	178	180	182	185	188	192	195	198	199	201
114	164	166	169	171	173	174	176	179	182	185	189	192	195	196	198
112	161	163	165	167	169	171	173	176	179	182	185	188	192	193	195
110	158	160	162	164	166	167	169	172	175	178	182	185	189	190	192
108	154	156	159	160	162	164	166	169	172	175	179	182	186	187	
100	151	153	155	157	159	160	162	165	168	172	176	179	183	184	
104	148	150	152	153	155	157	159	162	165	169	173	175	179		
102	145	148	148	150	152	153	155	158	162	165	169	172	176		
100	142	143	145	146	148	149	152	155	158	162	166	169			
98	139	140	142	143	145	140	148	151	155	159	163	166			
96	136	137	139	140	142	142	144	148	152	156	160				
94	133	133	135	136	138	139	141	144	148	152	157				
92	130	130	132	133	135	135	137	141	145	149					
90	128	127	128	129	131	132	134	137	142	148					
88	123	124	125	126	128	128	130	134	138						
88	120	120	122	122	124	125	127	130	135						
84	117	117	119	119	121	121	123	127							
82	114	113	115	115	117	118	120	123							
80	111	110	112	112	114	114	116								
78	107	107	108	108	110	111	113								
76	104	104	105	105	107	107									
74	101	100	102	101	103	104									
72	98	97	98	98	99										
70	95	94	95	94	96										
68	92	90	92	91											
66	88	87	88	88											
64	85	84	85												
62	82	81	81												
60	79	77													
Multipli-	1.58	1.64	1.69	1.72	1.75	1.78	1.76	1.72	1.68	1.64	1.60	1.57	1.54	1.52	1.50

APPENDIX M

Hewitt swimming achievement scales¹⁸

Rating	25 yd. flutter kick, polo ball	50 yd. crawl	Elementary backstroke	Glide relaxation side	Breast stroke
<i>High school boys</i>					
Superior	15 and below	27 and below	8 and below	6 and below	8 and below
Good	16-27	28-34	7-10	7-11	7-10
Average	28-42	35-45	11-18	12-17	11-17
Poor	43-65	46-59	19-30	18-28	18-28
Inferior	66 and up	80 and up	31 and up	29 and up	26 and up
<i>High school girls</i>					
Superior	24 and below	36 and below	6 and below	0 and below	0 and below
Good	25-31	37-45	7-10	7-10	7-9
Average	32-47	46-60	11-18	11-17	10-17
Poor	48-69	81-80	19-30	18-28	18-28
Inferior	90 and up	81 and up	31 and up	29 and up	29 and up

¹⁸ Jack E. Hewitt, "Achievement Scale Scores for High School Swimming," *Research Quarterly*, May 1949.

ACHIEVEMENT SCORES FOR HIGH SCHOOL SWIMMING - BOYS

Percentiles	25-yard flutter	Kick with polo ball	50-yard crawl	Glide & relaxation ability. No. of strokes for 25 yards	
	Seconds	Seconds	Elem. back	Side	Breast
100					
99	8-9	26	4	4	4
98	10-13	27	5	5	5
97	14-15	28	6	6	8
96	16	28	7		
95	17		7	8	
94	18	29			7
93	19				
92	20		8		
91	21				
90		30		9	8
89	22				
88					
87					
86	23	31			
85			9	10	9
84					
83	24	33			
82					
81					
80	25	33	10		
79					16
78	26				
77					
76			11		
75		34			
74	27		11		
73					
72				11	
71					
70	28				
69					
68	29				
67		35			
66					
65					
64	30			12	12
63		36	12		
62	31				
61					
60					
59	32				
58		37			
57			13		
56					13
55		38		13	
54	33				
53					
52		39			
51			14		
50					
49	34				14
48					
47	35	40		14	
46					

Percentiles	25-yard flutter	Kick with polo ball	50-yard crawl	Glide & relaxation ability. No. of strokes for 25 yards	
	Seconds	Seconds	Elem. back	Side	Breast
45				15	
44					
43					
42			41		15
41	36				
40			42		15
39					
38					
37	37			16	
36			43		18
35	38				
34				17	16
33	39				
32				44	
31	40				
30					17
29	41				
28				18	17
27	42	45			
26					
25	43	46			18
24					
23	44			19	18
22	45	47			19
21					
20	46	48			19
19	47				
18	48	49		20	
17				21	20
16	49			22	
15	50			23	
14	51	50		24	21
13				51	
12	52	52			22
11	53			25	
10	54	53			23
9	55	54		26	23
8	56	55		27	24
7	57	56		28	25
6	58-59	57	29		26
5	60-61	58			27
4	62-65	59		30	28
3	66-68	60-61	31-32		29
2	69-71	62-65	34-35	30	30-32
1.8	72	68	36-38	31	33-35
1.6	72				
1.4	74	67			36-37
1.2	75				38-39
1.0	76	68	39	32-33	40-42
.8	77-79	69	40-45	34-35	43
.6	80-81	70-73	46-49	36-39	44-48
.4	82-85	74-79	50-58	40-45	47-50
.2	86-89	80	59	46-49	51-58
.1	90	81	60	50	59

ACHIEVEMENT SCALE SCORES FOR HIGH SCHOOL SWIMMING - GIRLS

Percentiles	25-yard flutter kick with polo ball	50-yard crawf	Glide & relaxation ability. No. of strokes for 25 yards	Seconds	Seconds	Elem. back	Side	Breast
100								
99	16-18	29-31	5	5	5			
93	19-21	32-34	6	6	6			
97	22-24	35-38	7	7	7			
96	25		8	8	7			
95		37	7					
94	26	38						
93		39						
92		39						
91	27							
90		40						
89							8	
88	28							
87		41						
86			8	9				
85	29							
84		42						
83							9	
82								
81		43						
80	30	44		10				
79								
78								
77								
78								
75		45						
74	31							
73								
72			9					
71								
70	32	46		11	10			
69								
68			10					
67								
66	33	47						
65								
64	34							
63								
62	35							
61		48						
60				11	12			
59								
58	38	49					11	
57								
56								
55								
54	37	50	12					
53								
52								
51	38	51						
50		52		13				
49	39							
48								
47			53				12	
46	40			13				

Percentiles	25-yard flutter kick with polo ball	50-yard crawf	Glide & relaxation ability. No. of strokes for 25 yards	Seconds	Seconds	Elem. back	Side	Breast
45								
44							14	
43					54			
42				41				
41					55			
40				42			15	14
39								
38				43	58			13
37								
36				44			16	
35				45	57			
34							15	14
33				31	58			
32								
31				46	59	17		
30								
29				47	60	18		16
28								
27				26	61			
26								
25				48				15
24				49	62	19		
23								
22				22	60		17	16
21				51	63			
20					64	20	18	
19				52				
18				53-54	65			
17				55	66	21		17
16				56	68	22		18
15								
14				57	67			
13				58	68		19	19
12				59	69	23		
11				62	70	20		
10				63-64	71	24		
9				65-66	72		21	20
8				67-70	73			21
7				71-74	74	25		22
6				75-78	75	26		23
5				79-82	76-77	27	23	23
4								
3				83-86	78	28		24
2				87-89	79-80	29		25
1				90-96	81-83	30	25-26	
1.1				97	84-87	31	21	26-27
1.2				98	88	32	28	28
1.3								
1.4				99	89	33		
1.5				100-103	90	34		29
1.6				104-106	91-92	35		30
1.7				107-109	93-94	36	31	29
1.8				110-114	95-98		32	30
1.9								
2.0				115-117	97	37	33	31
2.1				118-120	98	38	34	32
2.2				121-123	99	39	35	
2.3				124	100	40	38	33

SUMMARY

Achievement scale scores in swimming for boys and girls in high school are the results obtained from testing 1,093 students in six high schools of the bay area.

Events selected were those recommended by high school swimming instructors as fundamental skills in their aquatic program. The tests given follow:

1. Time for the 25-yard flutter kick with polo ball.
2. Time for the 50-yard crawl stroke.
3. Number of strokes required to swim 25-yard elementary back stroke.
4. Number of strokes required to swim 25-yard side stroke.
5. Number of strokes required to swim 25-yard breast stroke.
6. Number of yards achieved for the 10-minute endurance swim.

It was found when compiling critical ratios that significant differences existed when comparing the data for boys and girls, necessitating separate scale scores for each.

The majority of the distributions were negatively skewed and because of this abnormality, raw scores were put into a cumulative frequency distribution and percentages determined. These percentage scores were then plotted in terms of a smoothed ogive and the scale scores ascertained. They range from 0 to 99.

Reliability was determined by repeating the test without intervening instruction and product moment r for the retest follows: elementary back, $.96 \mp .04$; side stroke, $.90 \mp .01$; breast stroke, $.93 \mp .01$; 50-yard crawl stroke, $.92 \mp .03$; and the 25-yard flutter kick, $.89 \mp .02$.

The total raw battery test score was used as the criterion in absence of a reliable standardized test. Each event was then correlated with the criterion and validity established. The 10-minute endurance swim correlated lowest with the criterion and because it required the most time to administer was eliminated from the final battery. On the other hand, the side stroke correlated highest with the criterion, r of $.94 \mp .004$, and if time is an important factor it can be used as the best single measure of high school swimming ability.

CORRELATION OF TOTAL SWIMMING ABILITY WITH INDIVIDUAL EVENTS

	25-yd. crawl time	25-yd. flutter kick time	10-min. endur- ance swim	Number of Strokes Required for: 25-yd. elem. back	25-yd. side stroke	25-yd. breast stroke
Total of swimming Scores $r = .65 \mp .02$ (6 Tests)						
				$.604 \mp .03$	$.59 \mp .01$	$.58 \mp .01$
				$.94 \mp .004$	$.77 \mp .03$	

PROCEDURE FOR HIGH SCHOOL SWIMMING ACHIEVEMENT TESTS

The following test should be given to all students who can swim.

1. 50-yard crawl for time—use a racing dive. Swim the crawl stroke for 50 yards. Time students with a stop watch. Scoring: Record in tenth seconds, e.g., 28.4.

APPENDIX N

*Scoring scales for Scott
motor ability test*T-SCALES FOR MOTOR ABILITY TESTS FOR HIGH SCHOOL GIRLS¹¹

T-score	Wall pass (410)*	Basketball throw (ft.) (310)*	Broad jump (in.) (287)*	4 sec. dash (yd.) (398)*	Obstacle race (sec.) (374)*	Junior high f C.M.A.† (161)*	Junior high C.M.A.f (181)*	Senior high f C.M.A.† (169)*	Senior high C.M.A.f (169)*	T-score
80	10	71								80
79			96							79
78										78
77	15	68	94	27	18.5-18.9	148	205	150	226	77
76		66					201			76
75		85				190				75
74		64	92			140	194	148		74
73	14	63				140				73
72		01				134	192		222	72
71		59	90	20	19.0-19.4	132	190	140	218	71
70		55	88					142	214	70
69	13	54					188	140	208	69
68		52	88	25		130		138	204	68
67		51			19.5-19.9		186	130	198	67
66		50				123	180	134	194	66
65		49					178	132	192	65
64		48	84	24	20.0-20.4	126	176	130	190	64
63	12	47				124	174	128	188	63
62		40	82		20.5-20.9	122	172		182	62
61			80				166	128	178	61
60		45		23		120	166		172	60
59		44	76		21.0-21.4		162	124	170	59
58	11	43				116	160	122	168	58
57		42	76		21.5-21.9		158		166	57
56		41				110	150	120	164	56
55		40	74	22		114	154	118	162	55
54					22.0-22.4		152		160	54
53		39					150	116	158	53
52	10		72			112	148		154	52
51		37			22.5-22.9		146	114	150	51
50		36		21		110	144		148	50

T-SCALES FOR MOTOR ABILITY TESTS FOR HIGH SCHOOL GIRLS (Continued)

T-score	Wall pass (410)*	Basketball throw (ft.) (310)*	Broad jump (in.) (287)*	4 sec. dash (yd.) (398)*	Obstacle race (sec.) (374)*	Junior high † G.M.A. § (161)*	Junior high † G.M.A. § (161)*	Senior high † G.M.A. § (169)*	Senior high † G.M.A. § (169)*	T-scores
49		35	70			142	112	114	49	
48			68		23.0-23.4	108	138	110	42	48
47		34	60				138		138	47
46	9	33			23.5-23.9	108	134	108	136	40
45		32	61	20		104	132	106	131	45
44		31			24.0-24.4		130		132	44
43			62			102	126	104	128	43
42		30			24.5-24.9		124		126	42
41	8	29	60	10		100	122	102	124	41
40		28					120		120	40
39			58		25.0-25.4	98	118		118	39
38		27	56				114	100	118	38
37	7		54		25.5-25.9	98	112		114	37
36		26			26.0-26.4	94	110	98	110	36
35			52	18	26.5-26.9	92	108		108	35
34		25	50		27.0-27.4		106		106	34
33									102	33
32		24	47		27.5-27.9	90	104	96		32
31	0	23			28.0-28.4	88	102		100	31
30			44				100		98	30
29		22		17	28.5-28.9	88	98		92	29
28					29.0-29.4	84	94	94	90	28
27		21			29.5-29.9					27
26			40		30.0-30.4	82			88	26
25	5	20					92	92	84	25
24				10	30.5-31.4					24
23		19	30		31.5-32.4	80			78	23
22				15	32.5-34.9					22
21		18								21
20	4			14	35.0-36.0					20

* Indicates the number of subjects on which the scale is based.

† Junior high, seventh, eighth, and ninth grades.

§ Senior high, tenth, eleventh, and twelfth grades.

† .7 basketball throw + 2.0 dash + 1.0 passes + .5 broad jump.

§ 2.0 basketball throw + 1.4 broad jump - 1.0 obstacle race.

NOTE: The 3-item G.M.A. tests are designated with the key §.

† M. Gladys Scott and Esther French, *Evaluation in Physical Education* (St. Louis: The C. V. Mosby Company, 1950), pp. 200-202.

MULTIPLICATION TABLES FOR MOTOR ABILITY TEST BATTERIES¹⁸

3-item battery

2.0 basketball throw (feet)
 + 1.4 broad jump (inches)
 - 1.0 obstacle race (seconds)

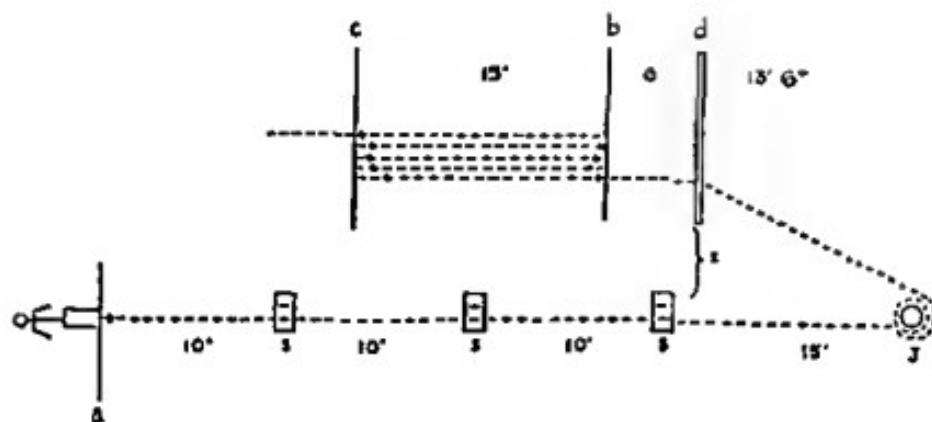
4-item battery

.7 basketball throw (feet)
 + 2.0 dash (yards)
 + 1.0 ball pass (times)
 + .5 broad jump (inches)

Broad jump \times 1.4Basketball throw \times .7

Raw score	$\times 1.4$	Raw score	$\times 1.4$	Raw score	$\times .7$	Raw score	$\times .7$
32	44.8	57	79.8	20	14.0	45	31.5
33	46.2	58	81.2	21	14.7	46	32.2
34	47.6	59	82.6	22	15.4	47	32.9
				23	16.1	48	33.6
35	49.0	60	84.0	24	16.8	49	34.3
36	50.4	61	85.4				
37	51.8	62	86.8	25	17.5	50	35.0
38	53.2	63	88.2	26	18.2	51	35.7
39	54.6	64	89.6	27	18.9	52	36.4
				28	19.6	53	37.1
40	56.0	65	91.0	29	20.3	54	37.8
41	57.4	66	92.4				
42	58.8	67	93.8	30	21.0	55	38.5
43	60.2	68	95.2	31	21.7	56	39.2
44	61.6	69	96.6	32	22.4	57	39.9
				33	23.1	58	40.6
45	63.0	70	98.0	34	23.8	59	41.3
46	64.4	71	99.4				
47	65.8	72	100.8	35	24.5	60	42.0
48	67.2	73	102.2	36	25.2	61	42.7
49	68.6	74	103.6	37	25.9	62	43.4
				38	26.6	63	44.1
50	70.0	75	105.0	39	27.3	64	44.8
51	71.4	76	106.4				
52	72.8	77	107.8	40	28.0	65	45.5
53	74.2	78	109.2	41	28.7	66	46.2
54	75.6	79	110.6	42	29.4	67	46.9
				43	30.1	68	47.6
55	77.0	80	112.0	44	30.8	69	48.3
56	78.4	81	113.4				

¹⁸ Ibid., p. 207.



Floor markings and pathway for Obstacle Race, Scott Test.

- | | |
|----------------------|---|
| a, Starting line. | f, Jump standard. |
| b, Line for shelves. | g, Spot on floor (12" by 18"). |
| c, Finish line. | h, Distance from end of bars to line of inner sides of jumps (4' 6"). |
| d, Bars (18" high). | j, J |

From Raymond A. Weiss and Marjorie Phillips, *Administration of Tests in Physical Education* (St. Louis: The C. V. Mosby Company, 1954), p. 126.

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